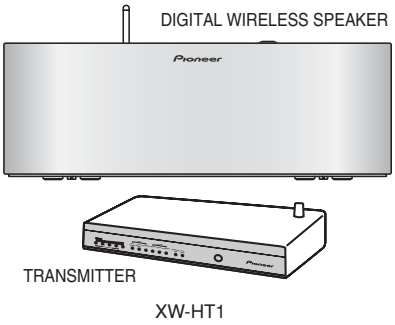
Pioneer *sound.vision.soul*

Service Manual



ORDER NO.
RRV3009

Digital Wireless Speaker System

XW-HT1

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
XW-HT1	KUCXJ	AC120V	

• Ask user to bring the Transmitter and Wireless Speaker pair set together when servicing.

For details, refer to "Important symbols for good services" .

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2004**

T-ZZR AUG. 2004 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

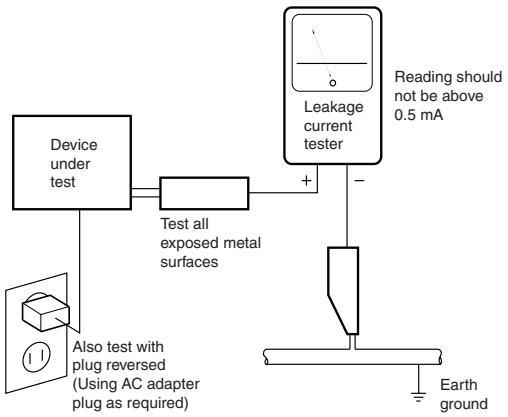
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Leakage current tester
Reading should not be above 0.5 mA
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

SAFETY INFORMATION 2
1. SPECIFICATIONS 5
2. EXPLODED VIEWS AND PARTS LIST 6
2.1 PACKING SECTION 6
2.2 TRANSMITTER SECTION 8
2.3 WIRELESS SPEAKER SECTION 10
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM 12
3.1 BLOCK DIAGRAM 12
3.2 OVERALL WIRING DIAGRAM 14
3.3 DSP(1/2) and DSP-LED ASSYS 16
3.4 DSP(2/2) ASSY 18
3.5 AMP, PRIMARY, BINDER and LED ASSYS 20
3.6 TX MODULE(1/3) 22
3.7 TX MODULE(2/3) 24
3.8 TX MODULE(3/3) 26
3.9 RX MODULE(1/4) 28
3.10 RX MODULE(2/4) 30
3.11 RX MODULE(3/4) 32
3.12 RX MODULE(4/4) 34
3.13 WAVEFORMS 36
4. PCB CONNECTION DIAGRAM 37
4.1 DSP ASSY 38
4.2 DSP-LED ASSY 40
4.3 AMP and BINDER ASSY 42
4.4 PRIMARY and AMP-LED ASSYS 44
4.5 TX MODULE 46
4.6 RX MODULE 48
5. PCB PARTS LIST 50
6. ADJUSTMENT 53
7. GENERAL INFORMATION 54
7.1 DIAGNOSIS 54
7.1.1 DIAGNOSIS NOTE 54
7.1.2 TROUBLESHOOTING 55
7.1.3 POWER ON SEQUENCE 57
7.1.4 NOTES ON REPLACE OF PARTS 58
7.1.5 DIAGNOSIS OF THE AMPLIFIER SECTION 58
7.1.6 PROTECTION CIRCUIT 59
7.1.7 DISASSEMBLY 60
7.1.8 The style of a wire rod 62
7.2 IC 63
8. PANEL FACILITIES 75

1. SPECIFICATIONS

Specifications

General
Digital Wireless Speaker System
(Transmitter/Wireless speaker)

Transmitter
AC adapter
Power requirements . . . . . AC 120V, 60Hz
Rated output 12V/500mA
Power consumption (without AC adapter) 7W
Input . . . . . RCA jack
Weight . . . . . 0.6 kg / 1 lb 5 oz.
Dimensions . . . . 255(W) x 58.5(H) x 121(D) mm
10(W) x 2 5/16(H) x 4 3/4(D)in.

Wireless speaker
Power requirements . . . . . AC 120V, 60Hz
Power consumption 26W
Amplifier characteristics
Maximum power output 10W/ch
RMS (1kHz, THD10%, 4Ω)
Speaker unit. . . . . 7cm cone type x2
Weight . . . . . 2.9 kg / 6 lbs 6 oz
Dimensions (without antenna) . . . . . 461.5(W) x 176.5(H) x 95(D) mm
18 3/16(W) x 6 15/16(H) x 3 3/4(D)in.
Depth with antenna. . . . . 110 mm / 4 5/16 in.

Accessories
Remote control 1
Lithium battery (CR2025). 1
AC adapter. 1
RCA/phono stereo audio cable 1
Power cord. 1
Radio wave caution sheet 1
Warranty card 1
These operating instructions 1

Note

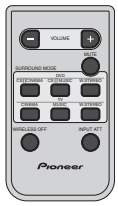
- *The specifications and design of this product are subject to change without notice, due to improvement.*

● Accessories

Checking the supplied accessories

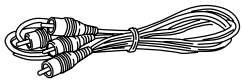
Please check that you've received the following supplied accessories:

- Remote control unit

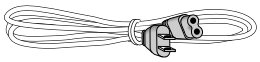


- Lithium battery (CR2025)

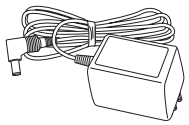
- RCA/phono stereo audio cable



- Power cord



- AC adapter

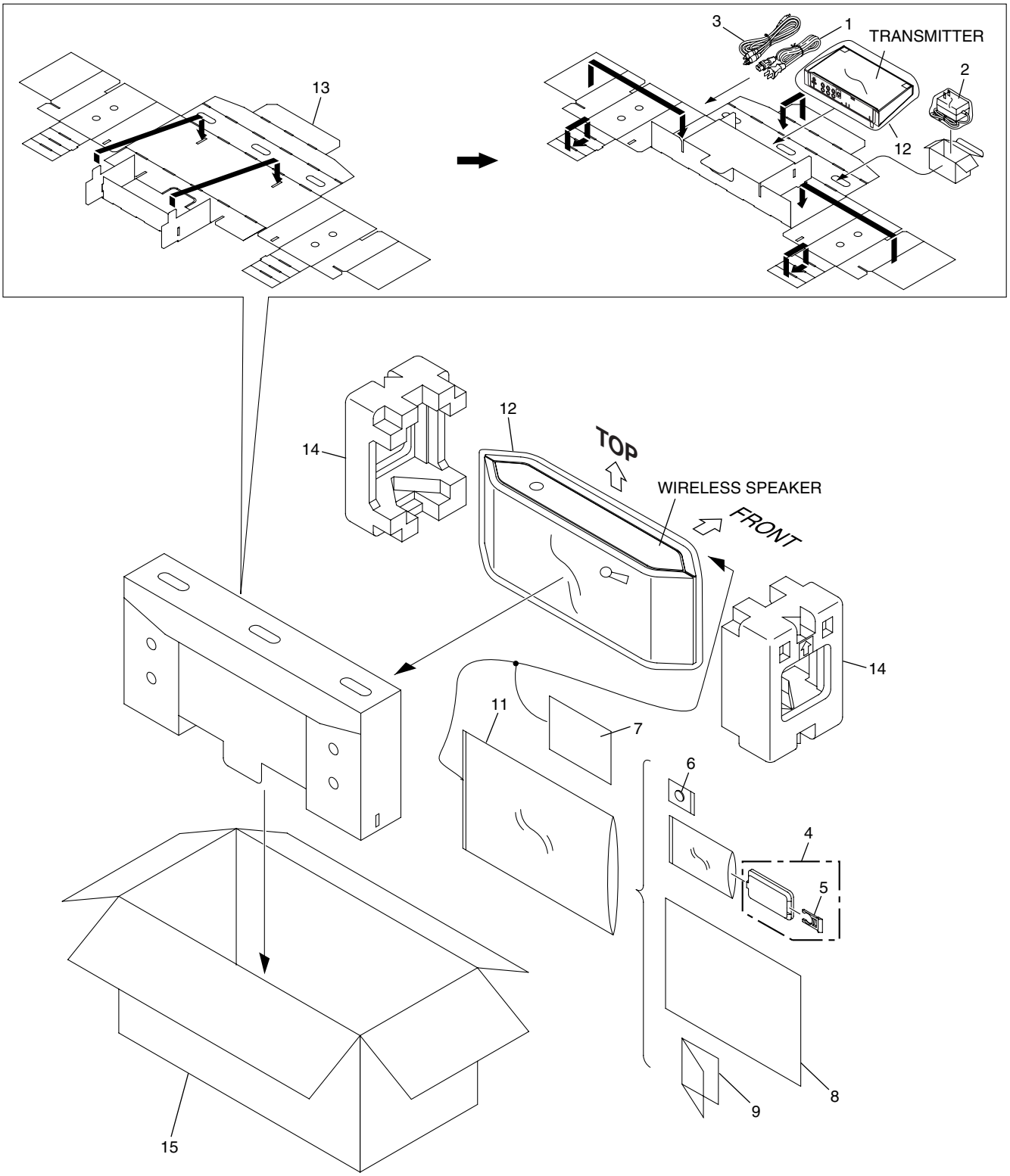


- Operating instructions
- Radio wave caution sheet
- Warranty card

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

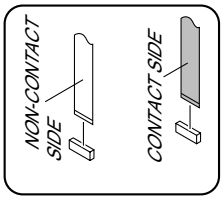
2.1 PACKING SECTION

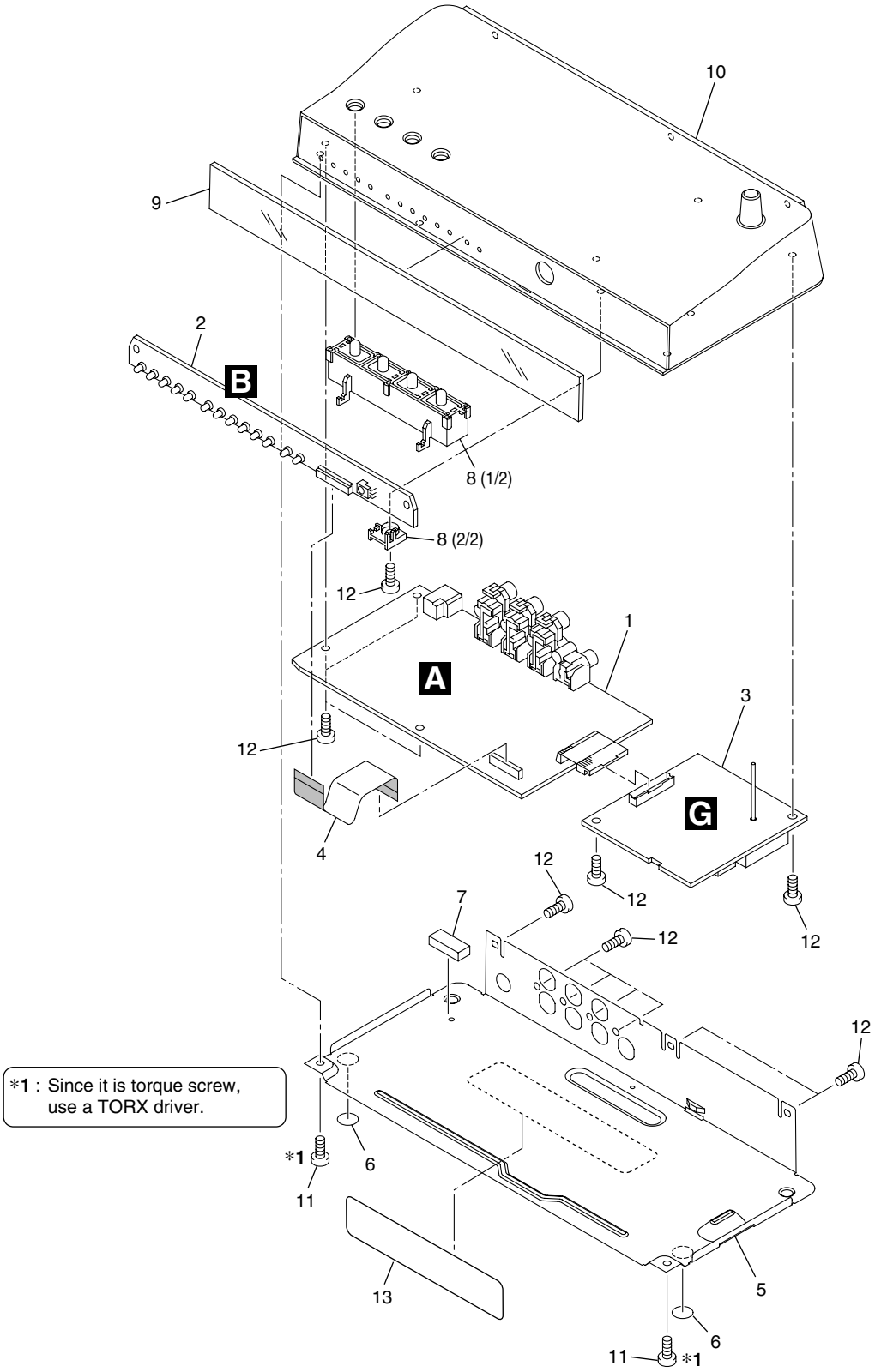


PACKING SECTION parts List

Mark	No.	Description	Part No.
⚠	1	AC Power Cord	ADG7021
	2	AC Adapter	AWR7019
	3	RCA Stereo Cord	XDE3045
	4	Remote control unit	AXD7402
	5	Battery Cover	AZN7998
NSP	6	Lithium Battery (CR2025)	VEM1009
	7	2.4GHz Caution Sheet	ARM7088
	8	Operating Instructions (English, French)	ARE7351
	9	Warranty Card (PA/POC)	ARY7045
	10	• • • •	
NSP	11	Polyethylene Bag (0.03x230x340)	Z21-038
	12	Packing Sheet (large)	AHG7015
NSP	13	ACCESSORY BOX	AHB7094
	14	Pad L/R	AHA7440
	15	Packing Case	AHD8297
	16	• • • •	

2.2 TRANSMITTER SECTION



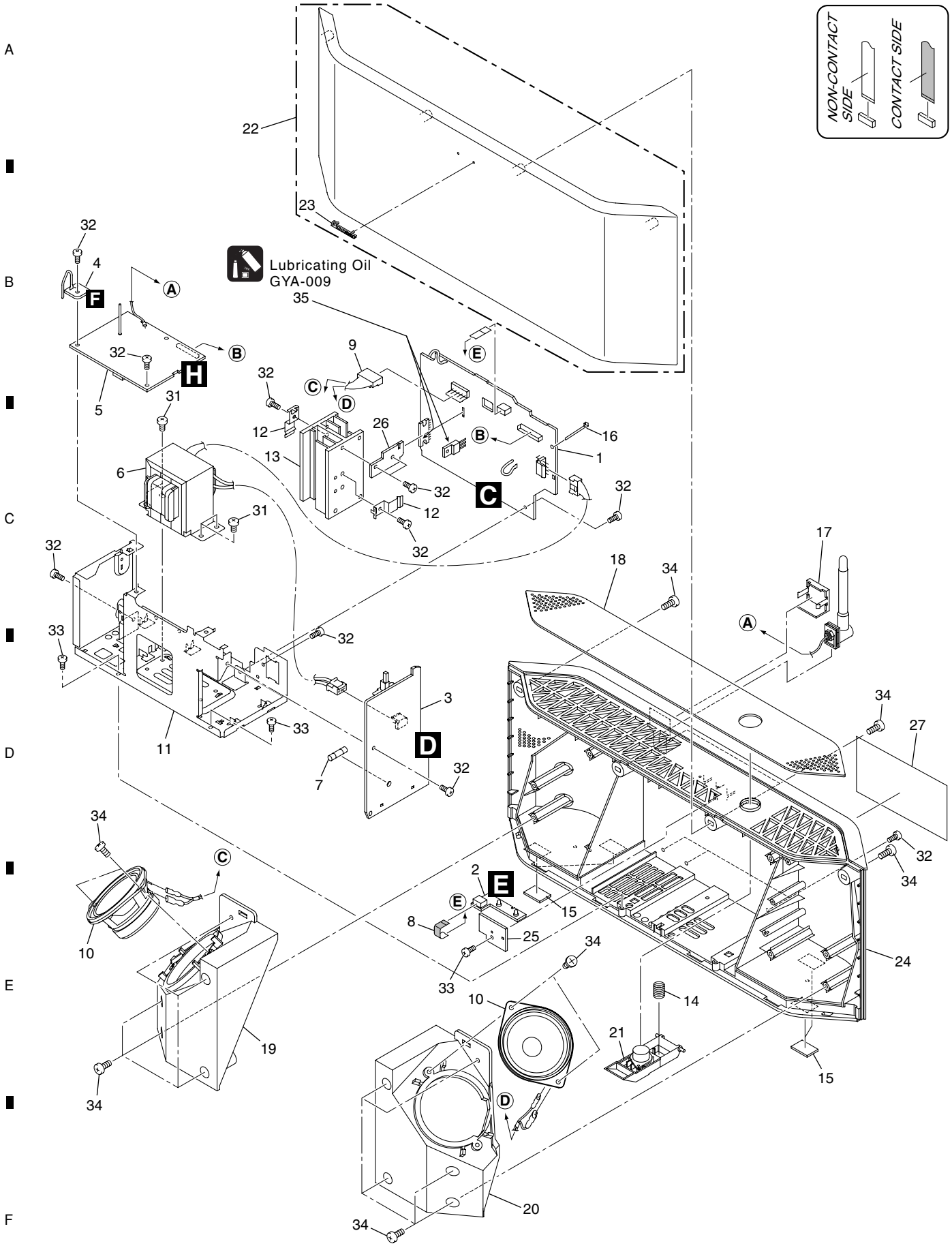


TRANSMITTER SECTION parts List

Mark	No.	Description	Part No.
	1	DSP Assy	AWU8244
	2	DSP-LED Assy	AWU8245
	3	TX Module	AXF7010
	4	19P Flexible Cable	ADD7499
	5	Chassis T	ANA7172
	6	Leg	AEB7090
	7	Radiation Sheet B	AEB7237
	8	MODE button	AAD7737
	9	Window	AAK8265
	10	Top Panel	AAK8264
	11	TORX Screw*	ABA7111
	12	Screw	BPZ30P080FTC
NSP	13	NAME LABEL T(PAP)	AAL7370

* Use TORX driver GGK1028.

2.3 WIRELESS SPEAKER SECTION

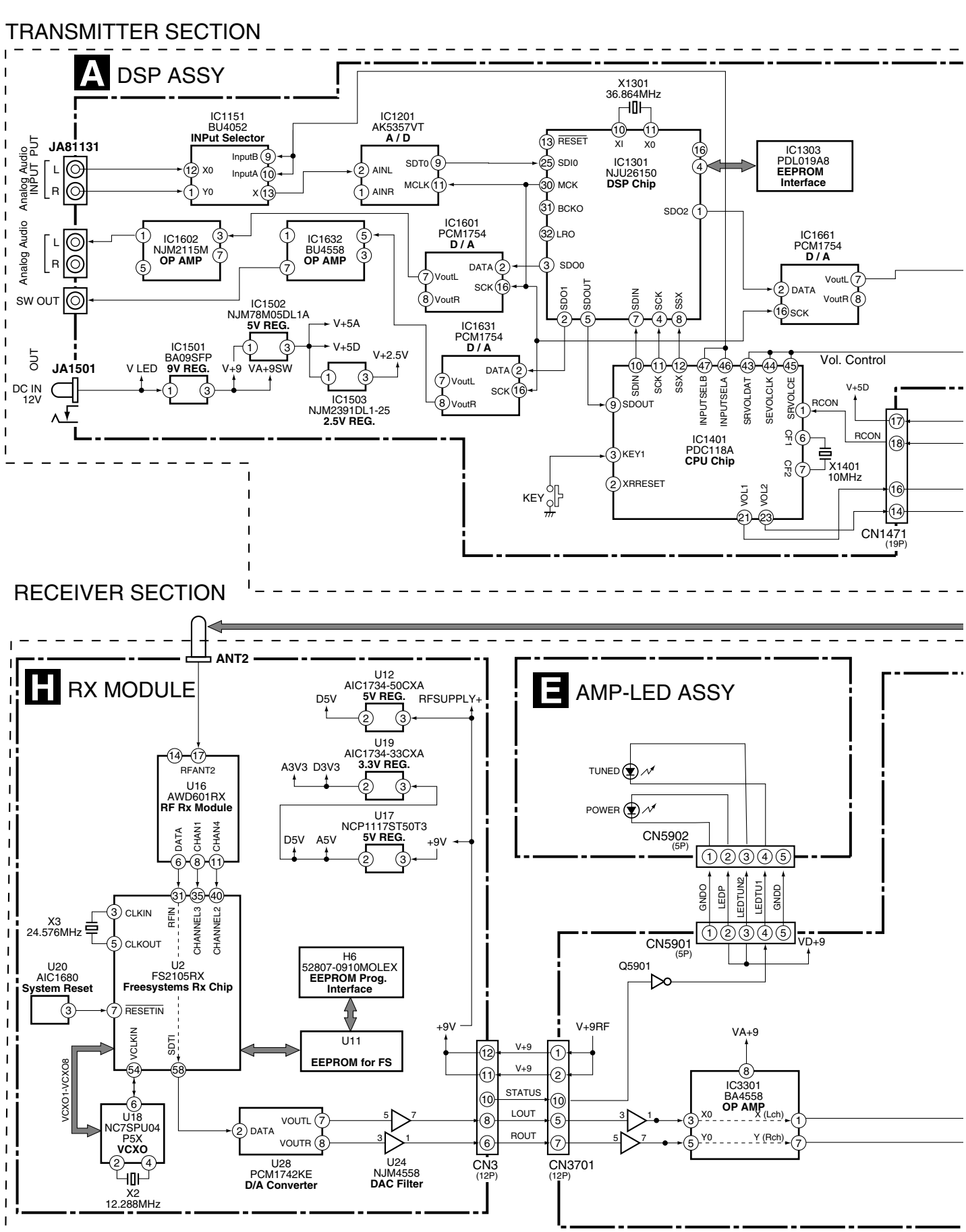


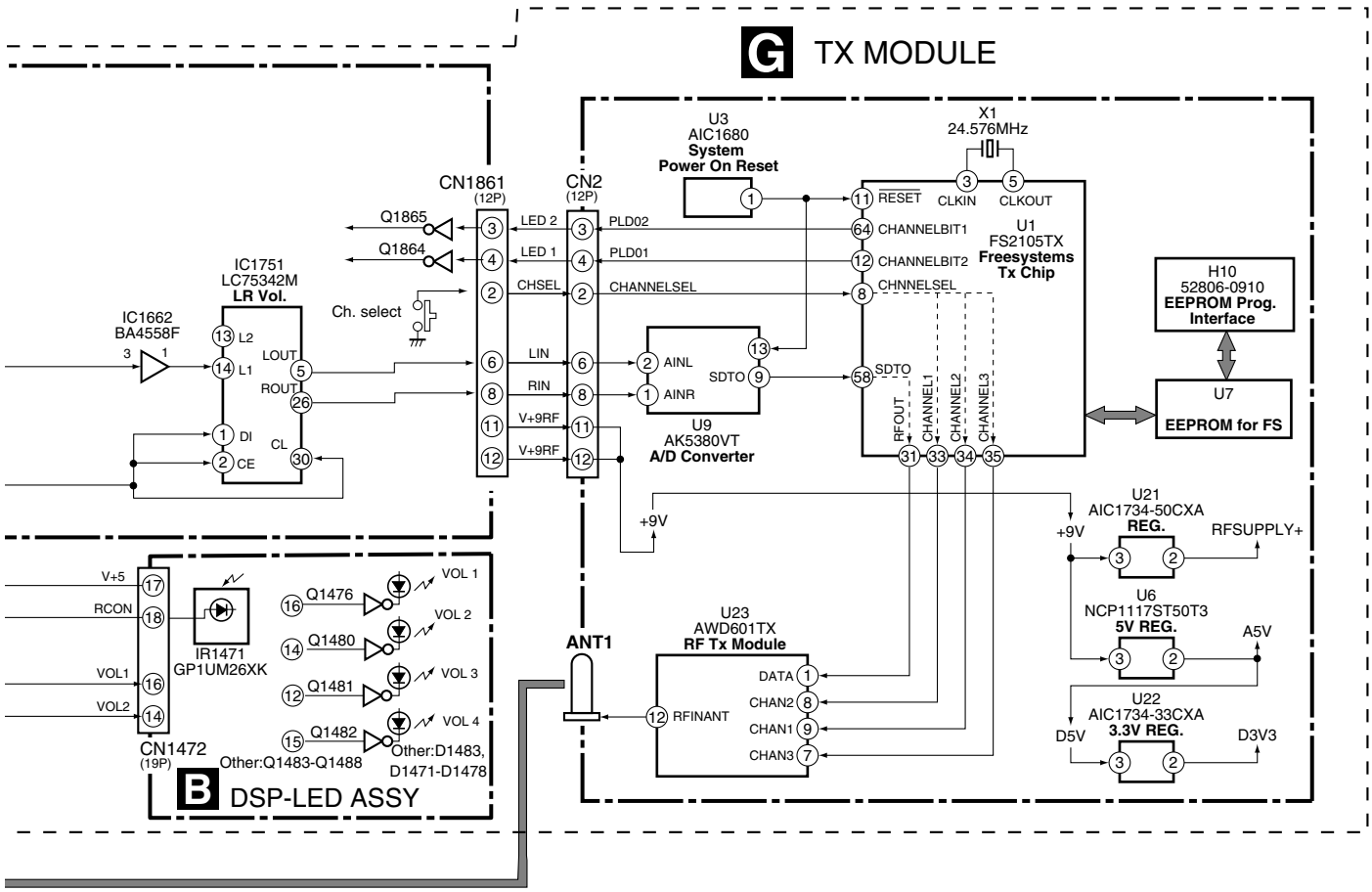
WIRELESS SPEAKER SECTION parts List

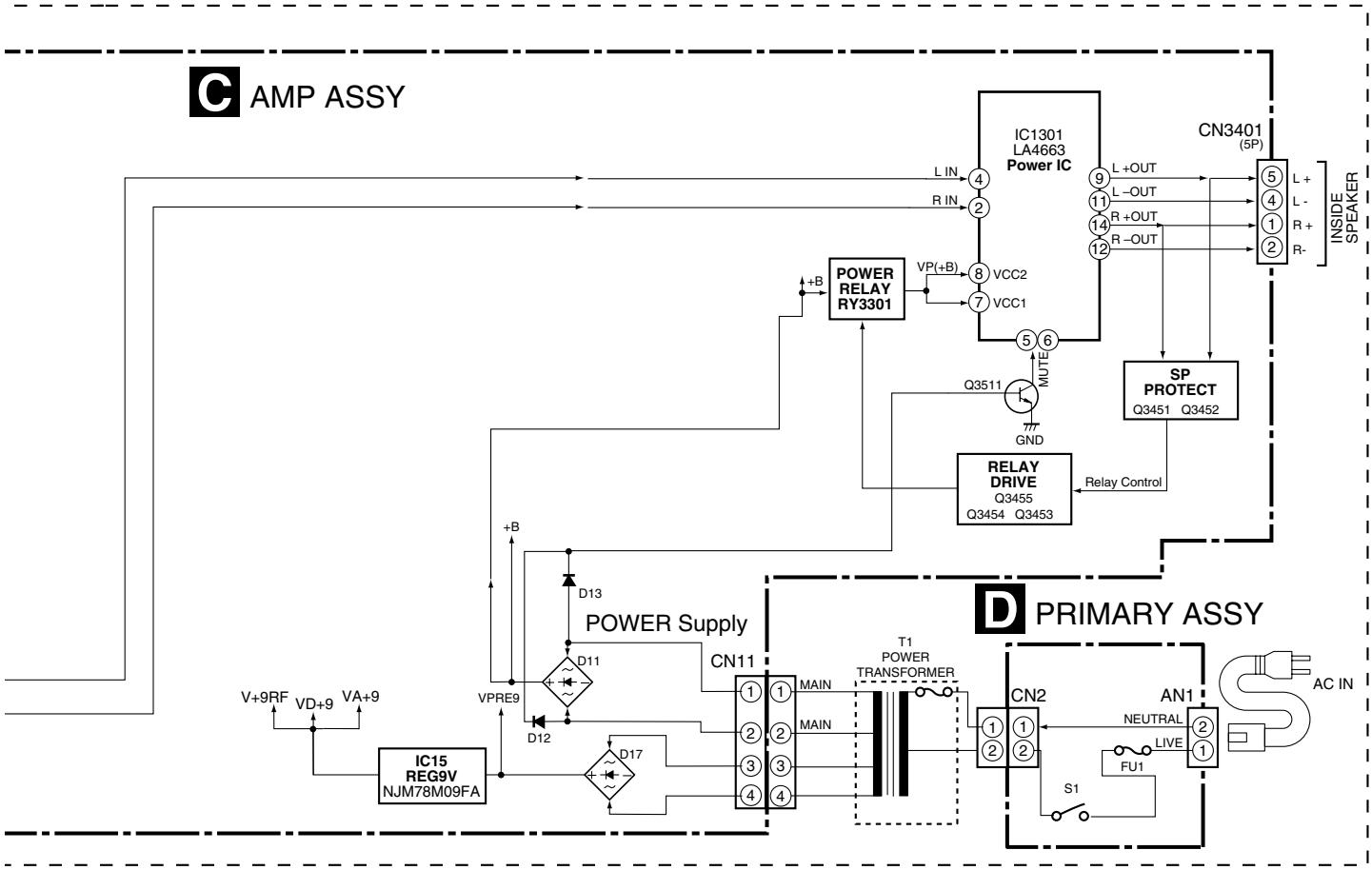
Mark	No.	Description	Part No.
	1	AMP Assy	AWU8246
	2	AMP-LED Assy	AWU8248
	3	PRIMARY Assy	AWU8247
	4	BINDER Assy	AWU8251
	5	RX Module	AXF7011
⚠	6	Power Transformer	ATS7388
⚠	7	Fuse (FU1 : 1.25A)	REK1108
	8	5P Flexible Cable	ADD7498
	9	4P Cabe Assy	ADX7470
	10	Speaker	B70AC50-52C
	11	Chassis	ANA7176
	12	FET Bracket A	ANG7432
	13	HEAT SINK (AL)	ANH7178
	14	SPRING K(MTL)	ABH7239
	15	RUBBER LEG	AEB7353
NSP	16	BINDER(BK-1)	ZCA-BK1
	17	ANTENNA COVER(PLS)	AAK8263
	18	OPERATION PANEL	AAK8260
	19	Baffle L	AMD7015
	20	Baffle R	AMD7016
	21	PWR Button Assy	AXG7245
	22	Grille Assy	AXG7240
	23	NAME PLATE 36(PLS)	AAM7013
	24	Rear Case Assy	AXG7241
NSP	25	ANGLE B	
NSP	26	ANGLE A	
NSP	27	NAME LABEL(KUC)	AAL7369
	28	• • • •	
	29	• • • •	
	30	• • • •	
	31	Screw	BBZ40P060FTC
	32	Screw	BBZ30P080FNI
	33	Screw	BPZ30P080FTC
	34	Screw	BPZ40P100FNI
	35	Lubricating Oil	GYA-009

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

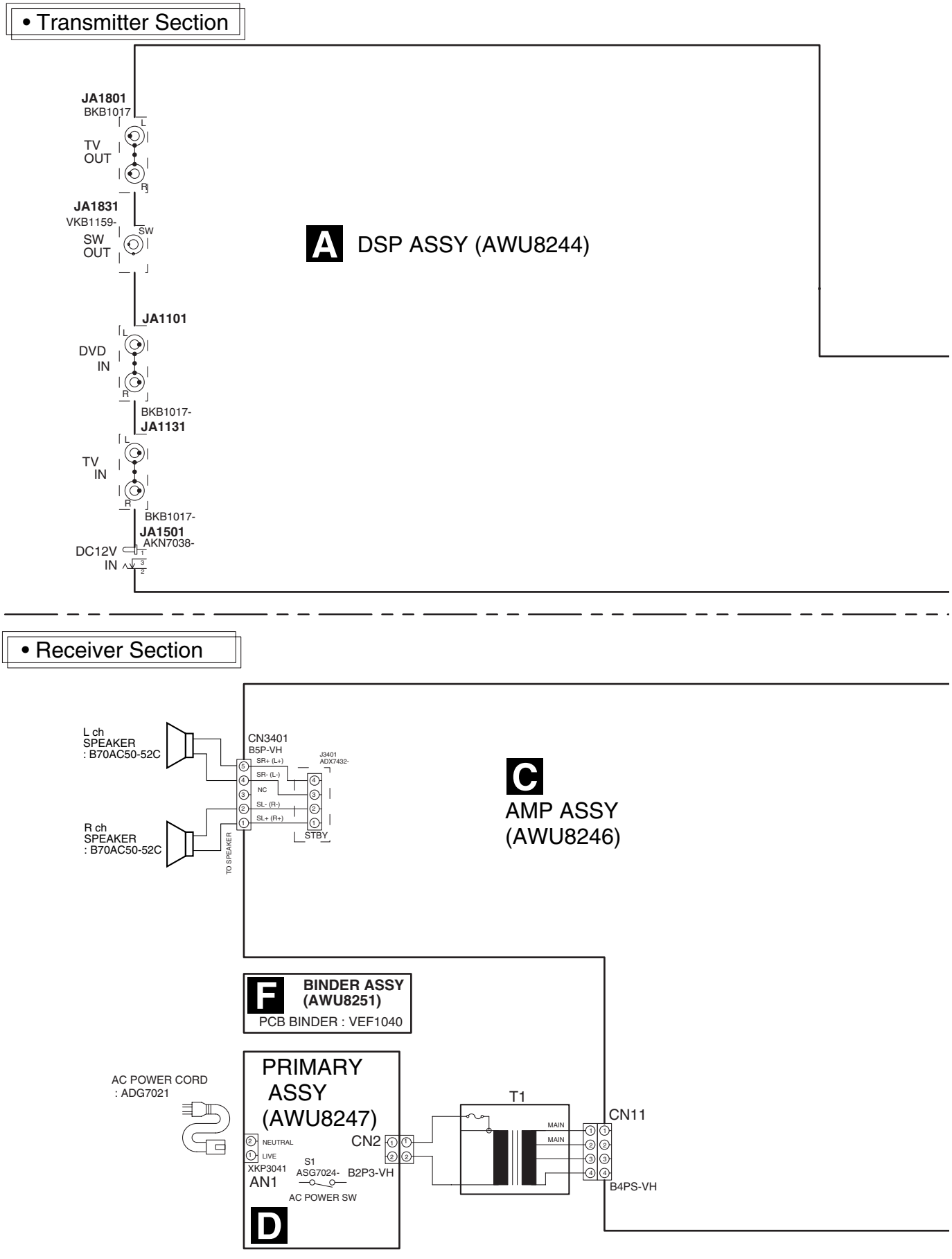
3.1 BLOCK DIAGRAM



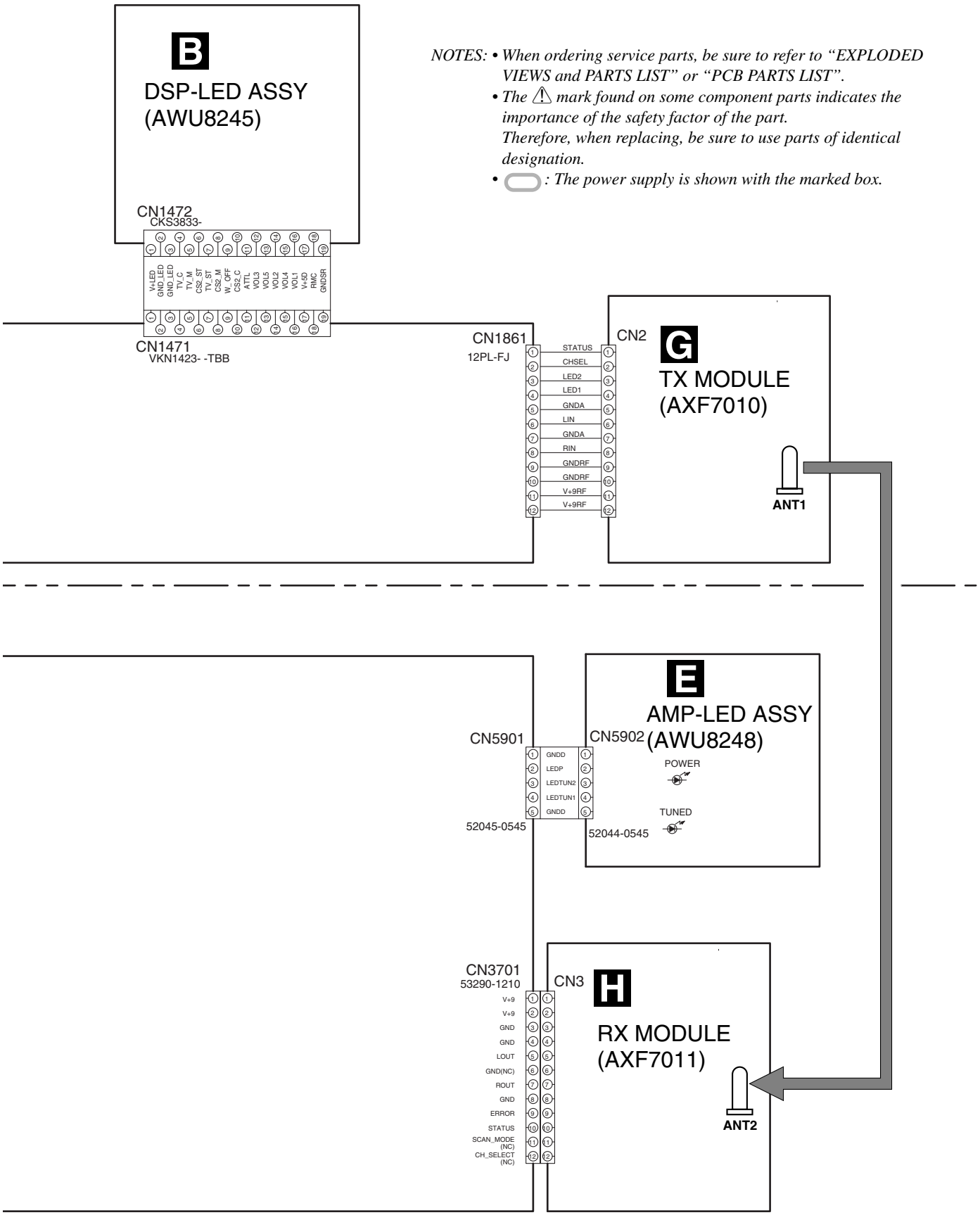

G TX MODULE
U3
AIC1680
System
Power On Reset
X1
24.576MHz
CN1861
(12P)
CN2
(12P)
Q1865
Q1864
LED 2
LED 1
CHSEL
PLD02
PLD01
CHANNELSEL
RESET
CLKIN
CLKOUT
CHANNELBIT1
CHANNELBIT2
CHNNELSEL
U1
FS2105TX
Freesystems
Tx Chip
IC1751
LC75342M
LR Vol.
IC1662
BA4558F
Ch. select
LOUT
ROUT
DI
CL
CE
LIN
RIN
V+9RF
AINL
AINR
SDTO
U9
AK5380VT
A/D Converter
RFOUT
CHANNEL1
CHANNEL2
CHANNEL3
H10
52806-0910
EEPROM Prog.
Interface
U7
EEPROM for FS
+9V
U21
AIC1734-50CXA
REG.
RFSUPPLY+
U6
NCP1117ST50T3
5V REG.
A5V
U22
AIC1734-33CXA
3.3V REG.
D5V
D3V3
U23
AWD601TX
RF Tx Module
ANT1
DATA
CHAN2
CHAN1
CHAN3
RFINANT
V+5
RCON
VOL1
VOL2
IR1471
GP1UM26XK
Q1476
Q1480
Q1481
Q1482
VOL 1
VOL 2
VOL 3
VOL 4
CN1472
(19P)
Other:Q1483-Q1488
Other:D1483,
D1471-D1478
B DSP-LED ASSY


C AMP ASSY
IC1301
LA4663
Power IC
CN3401
(5P)
L IN
R IN
L +OUT
L –OUT
R +OUT
R –OUT
L +
L -
R +
R-
INSIDE
SPEAKER
POWER
RELAY
RY3301
+B
VP(+B)
VCC2
VCC1
MUTE
Q3511
GND
SP
PROTECT
Q3451 Q3452
RELAY
DRIVE
Q3455
Q3454 Q3453
Relay Control
D13
POWER Supply
D11
D12
D17
VPRE9
V+9RF
VD+9
VA+9
IC15
REG9V
NJM78M09FA
CN11
MAIN
T1
POWER
TRANSFORMER
D PRIMARY ASSY
CN2
AN1
AC IN
NEUTRAL
LIVE
FU1
S1

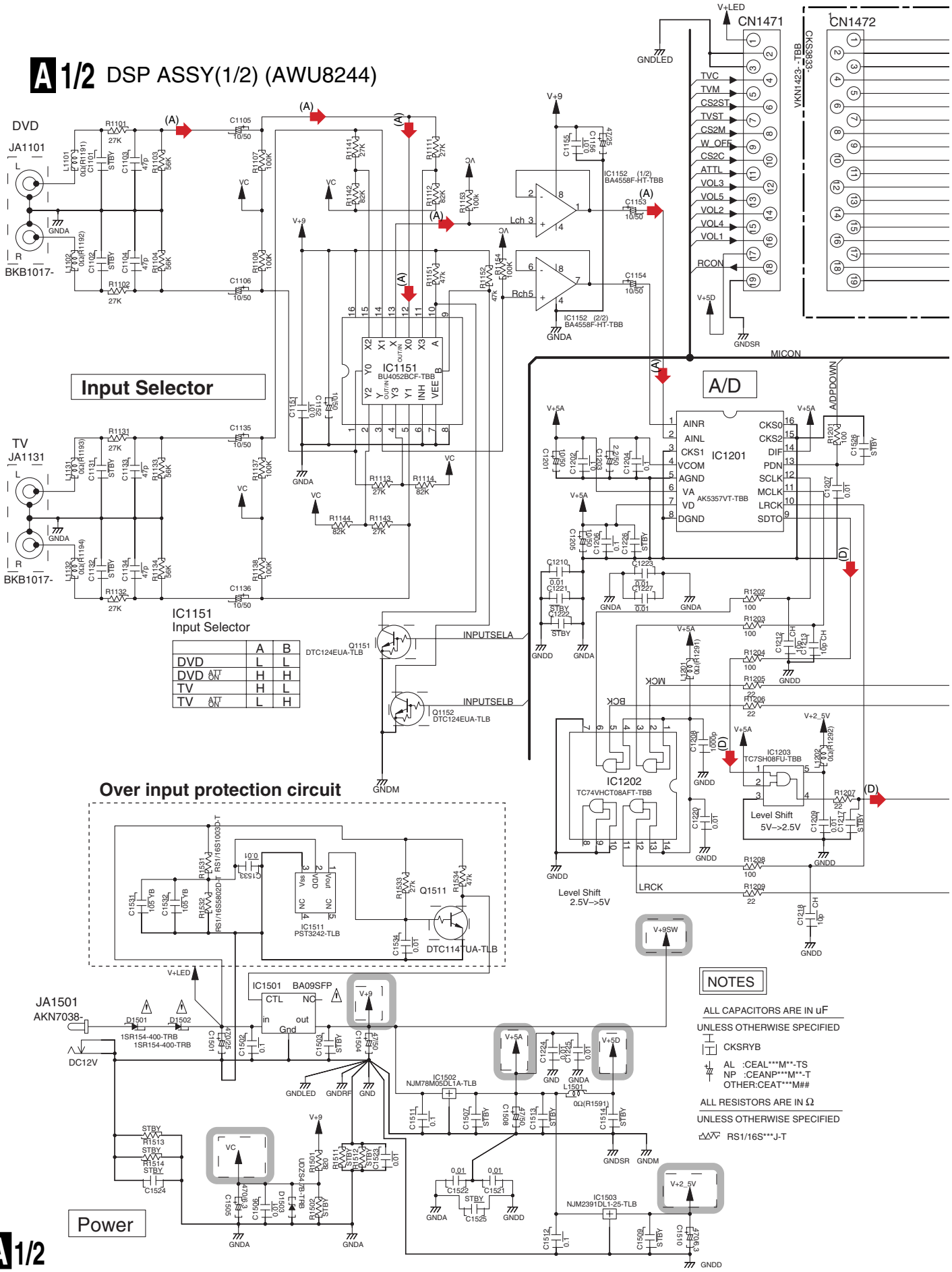
3.2 OVERALL WIRING DIAGRAM

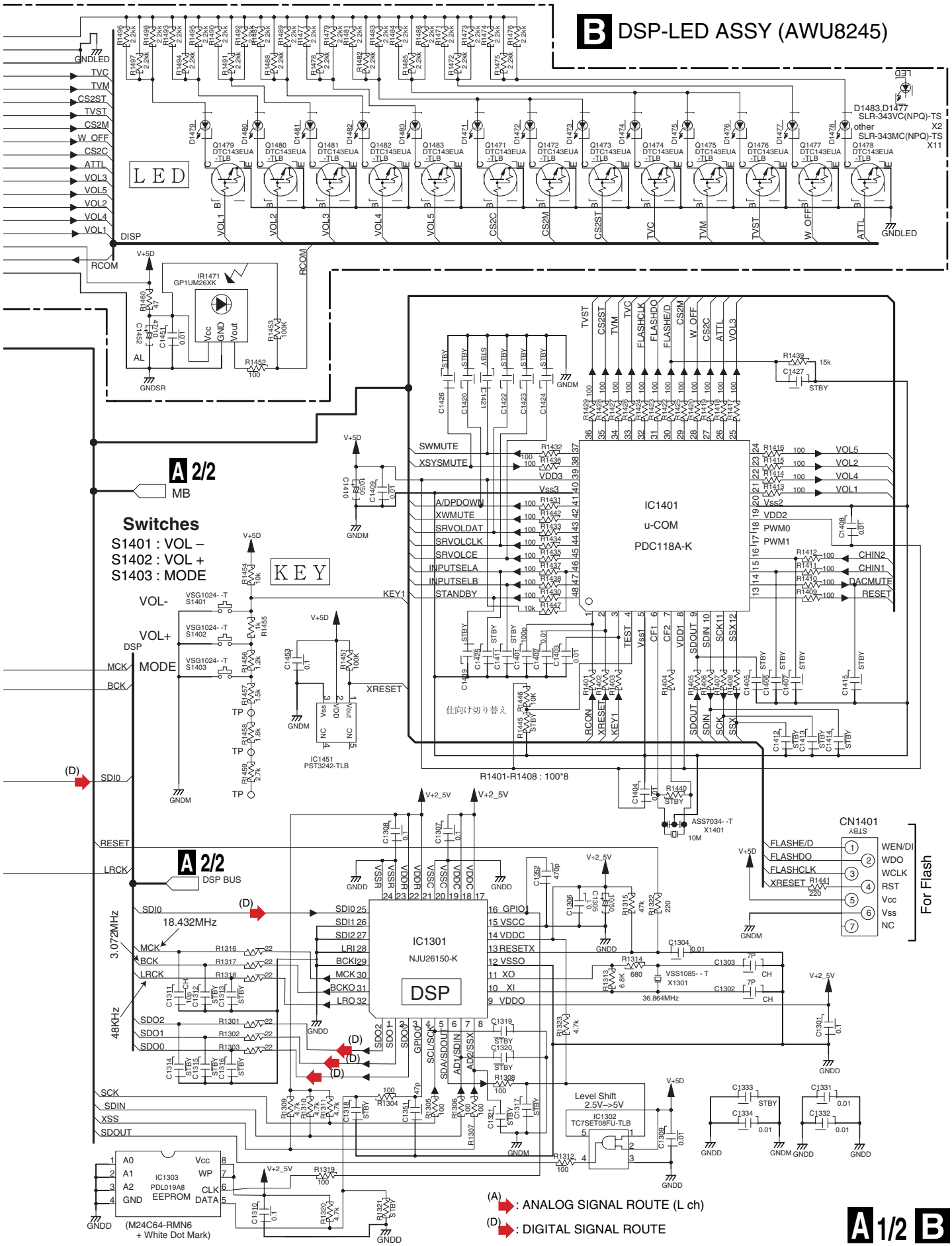


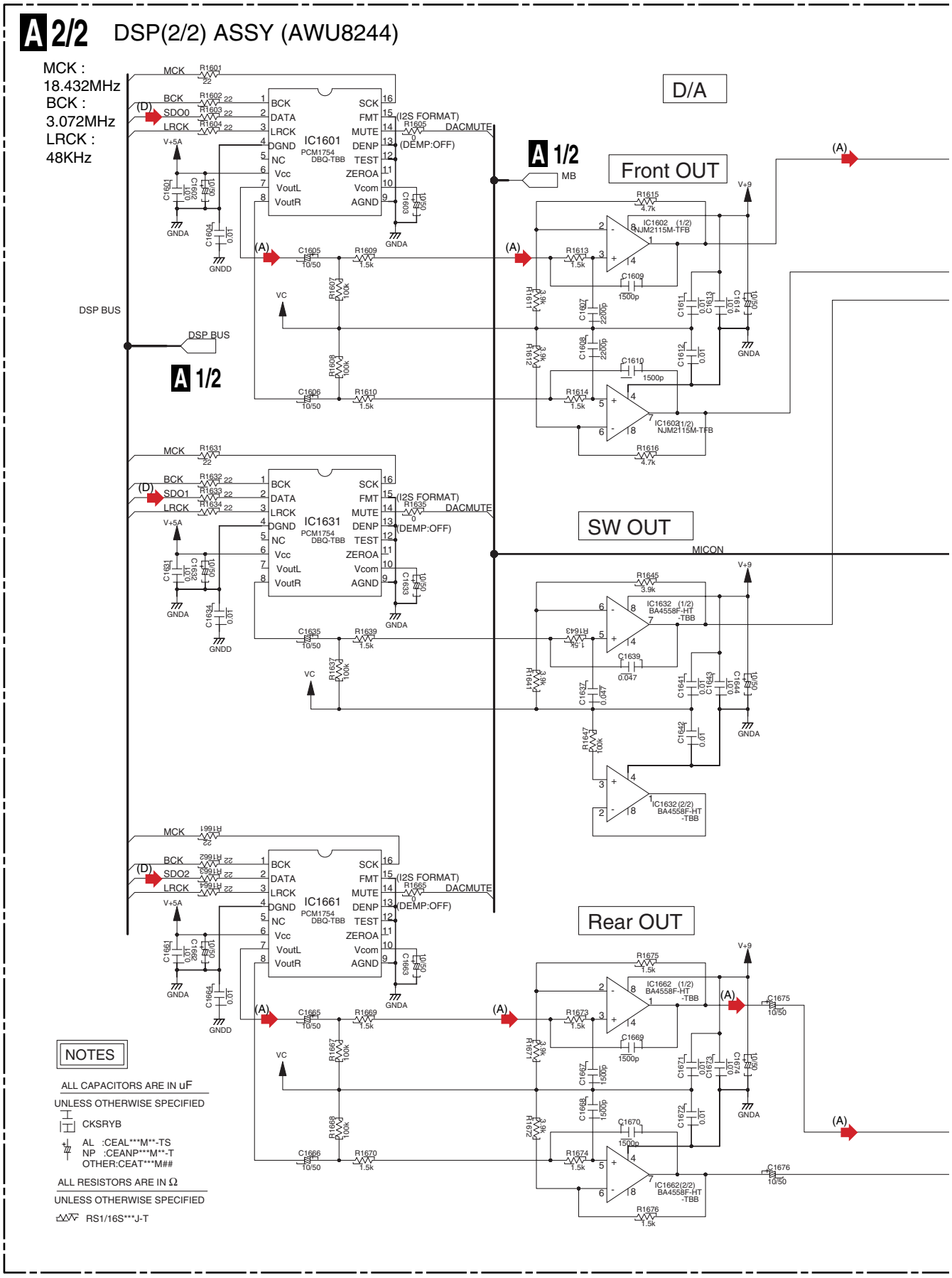
NOTES: • *When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".*
• *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
• *: The power supply is shown with the marked box.*



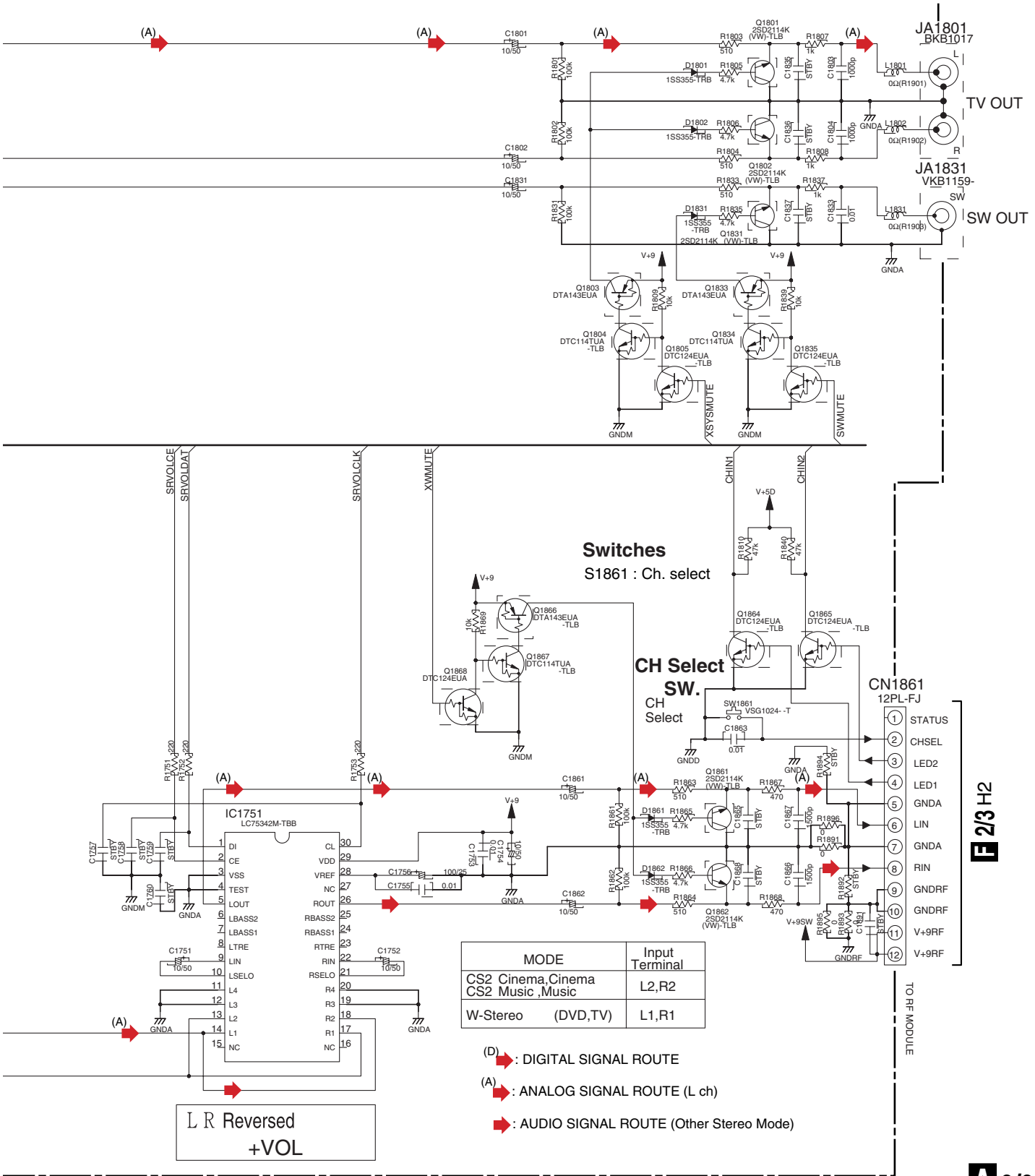
3.3 DSP(1/2) and DSP-LED ASSYS




B DSP-LED ASSY (AWU8245)
LED
D1483,D1477
SLR-343VC(NPQ)-TS
other
SLR-343MC(NPQ)-TS
X2
X11
GNDLED
DISP
RCOM
IR1471
GP1UM26XK
Vcc
GND
Vout
AL
GNDSR
A 2/2
MB
Switches
S1401 : VOL –
S1402 : VOL +
S1403 : MODE
KEY
VOL-
VOL+
MODE
IC1401
u-COM
PDC118A-K
SWMUTE
XSYSMUTE
A/DPDOWN
XWMUTE
SRVOLDAT
SRVOLCLK
SRVOLCE
INPUTSELA
INPUTSELB
STANDBY
KEY1
XRESET
仕向け切り替え
R1401-R1408 : 100*8
IC1451
PST3242-TLB
CN1401
For Flash
FLASHE/D
FLASHDO
FLASHCLK
XRESET
WEN/DI
WDO
WCLK
RST
Vcc
Vss
NC
A 2/2
DSP BUS
IC1301
NJU26150-K
DSP
18.432MHz
3.072MHz
48KHz
36.864MHz
IC1303
PDL019A8
EEPROM
(M24C64-RMN6
+ White Dot Mark)
Level Shift
2.5V->5V
IC1302
TC7SET08FU-TLB
(A) : ANALOG SIGNAL ROUTE (L ch)
(D) : DIGITAL SIGNAL ROUTE
A 1/2 B


A 2/2 DSP(2/2) ASSY (AWU8244)
MCK : 18.432MHz
BCK : 3.072MHz
LRCK : 48KHz
D/A
Front OUT
SW OUT
Rear OUT
MICON
DSP BUS
A 1/2
MB
IC1601
IC1631
IC1661
PCM1754 DBQ-TBB
IC1602 (1/2) NJM2115M-TFB
IC1603 (1/2) NJM2115M-TFB
IC1632 (1/2) BA4558F-HT -TBB
IC1632 (2/2) BA4558F-HT -TBB
IC1662 (1/2) BA4558F-HT -TBB
IC1662(2/2) BA4558F-HT -TBB
(I2S FORMAT)
(DEMP:OFF)
NOTES
ALL CAPACITORS ARE IN uF
UNLESS OTHERWISE SPECIFIED
CKSRYB
AL :CEAL***M**-TS
NP :CEANP***M**-T
OTHER:CEAT***M##
ALL RESISTORS ARE IN Ω
UNLESS OTHERWISE SPECIFIED
RS1/16S***J-T

: The power supply is shown with the marked box.

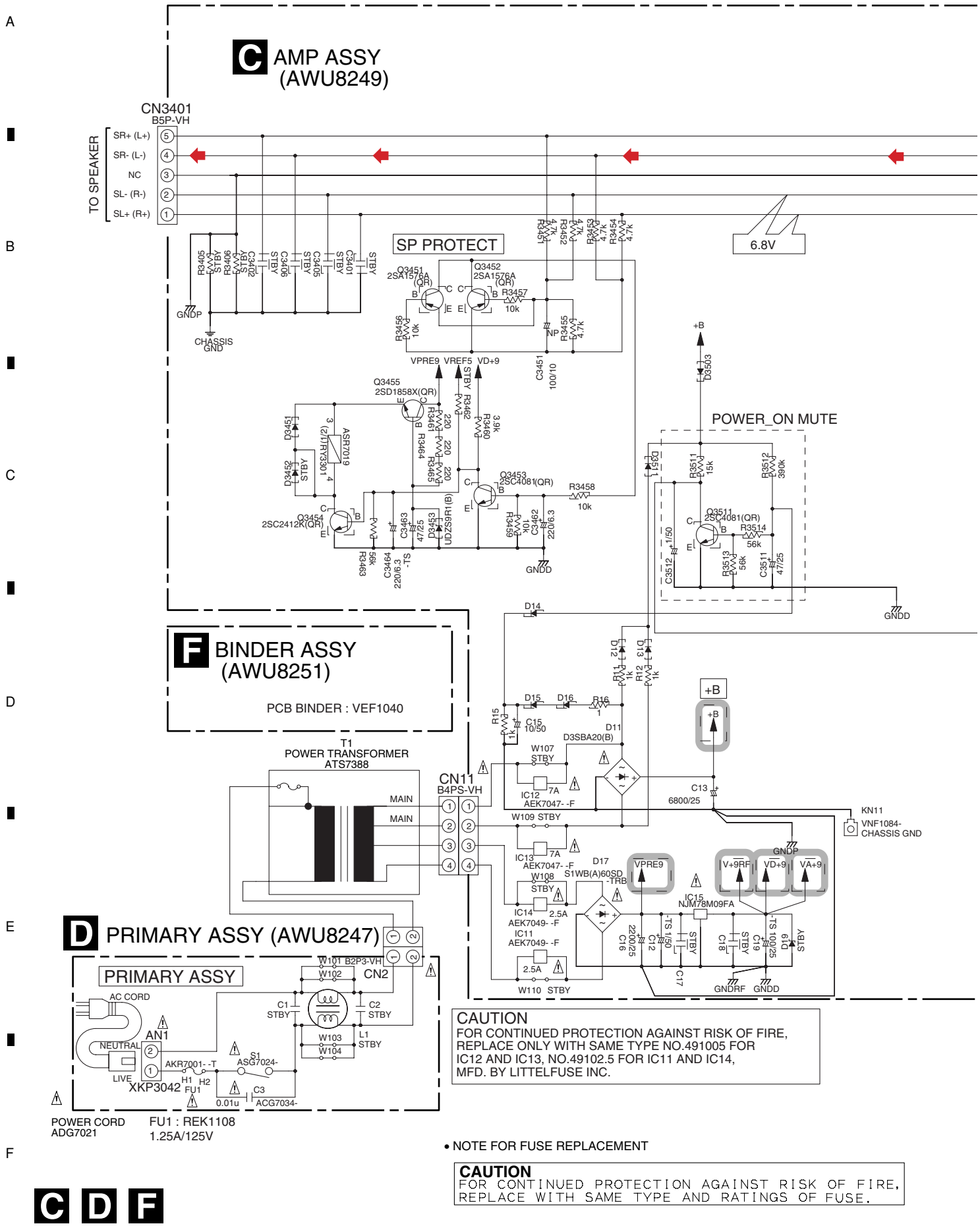


MODE	Input Terminal
CS2 Cinema,Cinema CS2 Music ,Music	L2,R2
W-Stereo (DVD,TV)	L1,R1

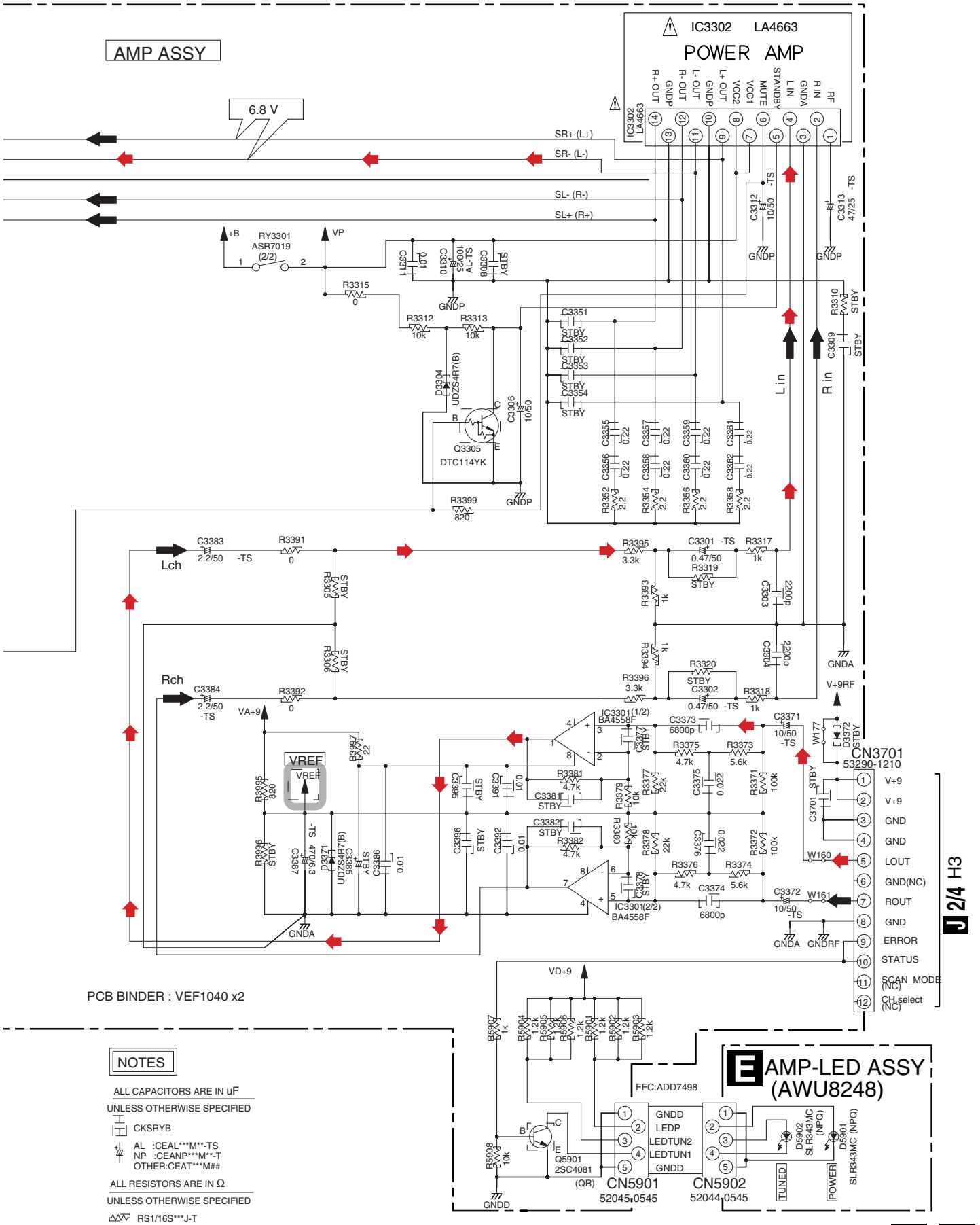
F 2/3 H2

A 2/2

3.5 AMP, PRIMARY, BINDER and LED ASSYS



C D F


AMP ASSY
IC3302 LA4663
POWER AMP
6.8 V
SR+ (L+)
SR- (L-)
SL- (R-)
SL+ (R+)
RY3301
ASR7019
(2/2)
VP
+B
R3315
0
GNDP
R3312
10k
R3313
10k
Q3305
DTC114YK
D3304
UDZS4R7(B)
R3399
820
C3351
C3352
C3353
C3354
C3355
C3356
C3357
C3358
C3359
C3360
C3361
C3362
R3352
R3354
R3356
R3358
L in
R in
R3310
C3309
STBY
C3312
C3313
-TS
GNDA
Lch
Rch
C3383
C3384
R3391
R3392
R3395
R3396
C3301
C3302
R3317
R3318
R3319
R3320
C3303
C3304
R3393
R3394
V+9RF
VA+9
VREF
IC3301(1/2)
IC3301(2/2)
BA4558F
C3373
C3374
C3375
C3376
C3377
C3378
C3379
C3380
C3381
C3382
C3386
C3387
C3391
C3392
C3396
R3373
R3374
R3375
R3376
R3377
R3378
R3379
R3380
R3381
R3382
R3371
R3372
D3371
D3372
W177
W160
W161
CN3701
53290-1210
V+9
GND
LOUT
GND(NC)
ROUT
ERROR
STATUS
SCAN_MODE (NC)
CH.select (NC)
GNDRF
J 2/4 H3
PCB BINDER : VEF1040 x2
VD+9
R5907
R5904
R5905
R5906
R5901
R5902
R5903
R5908
Q5901
2SC4081
(QR)
FFC:ADD7498
GNDD
LEDP
LEDTUN2
LEDTUN1
CN5901
52045-0545
CN5902
52044-0545
D5902
SLR343MC (NPQ)
D5901
TUNED
POWER
E AMP-LED ASSY
(AWU8248)
NOTES
ALL CAPACITORS ARE IN uF
UNLESS OTHERWISE SPECIFIED
CKSRYB
AL :CEAL***M**-TS
NP :CEANP***M**-T
OTHER:CEAT***M##
ALL RESISTORS ARE IN Ω
UNLESS OTHERWISE SPECIFIED
RS1/16S***J-T
: AUDIO SIGNAL ROUTE (L ch)

3.6 TX MODULE(1/3)

A

B

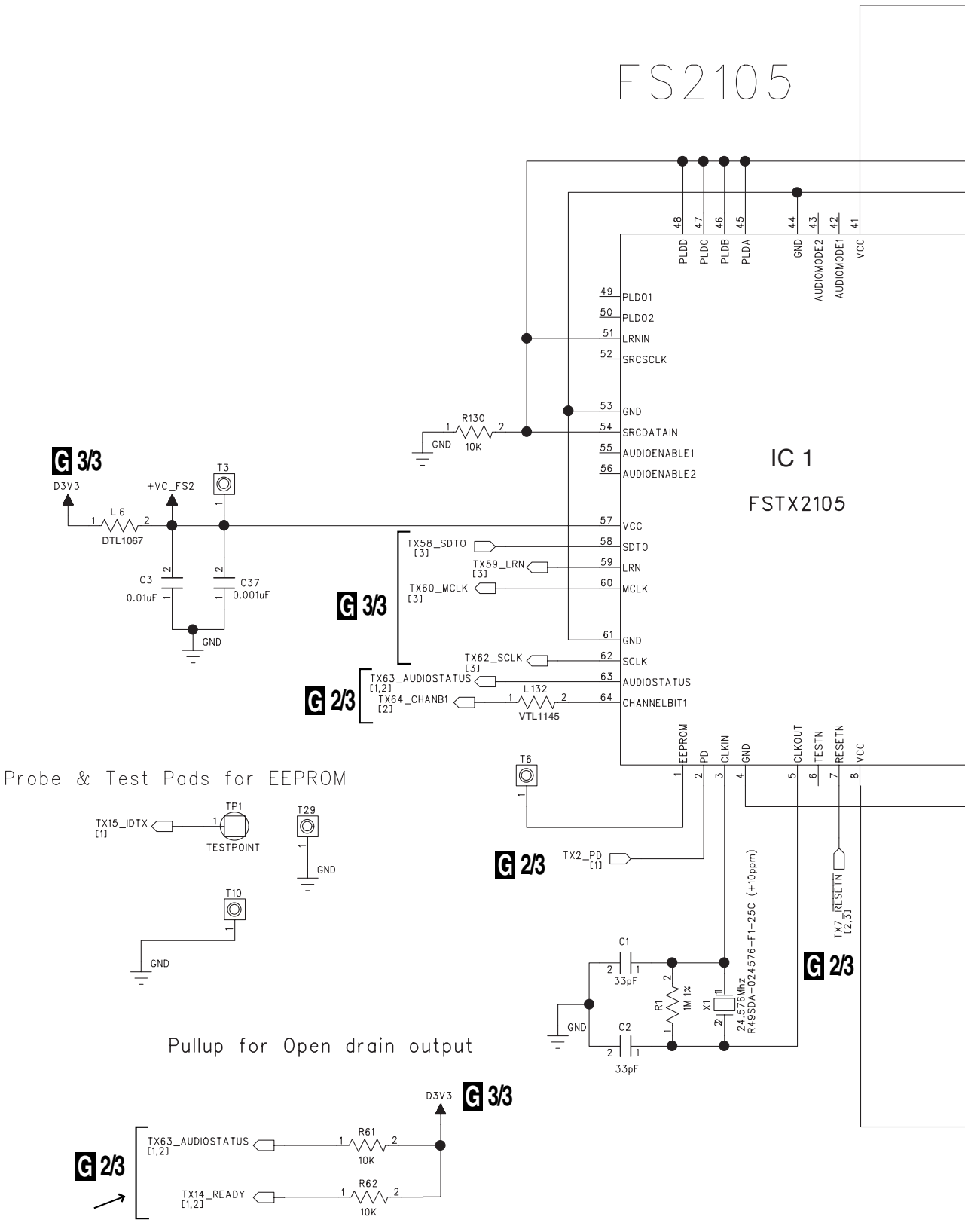
C

D

E

F

G 1/3 TX MODULE(1/3) (AXF7010)



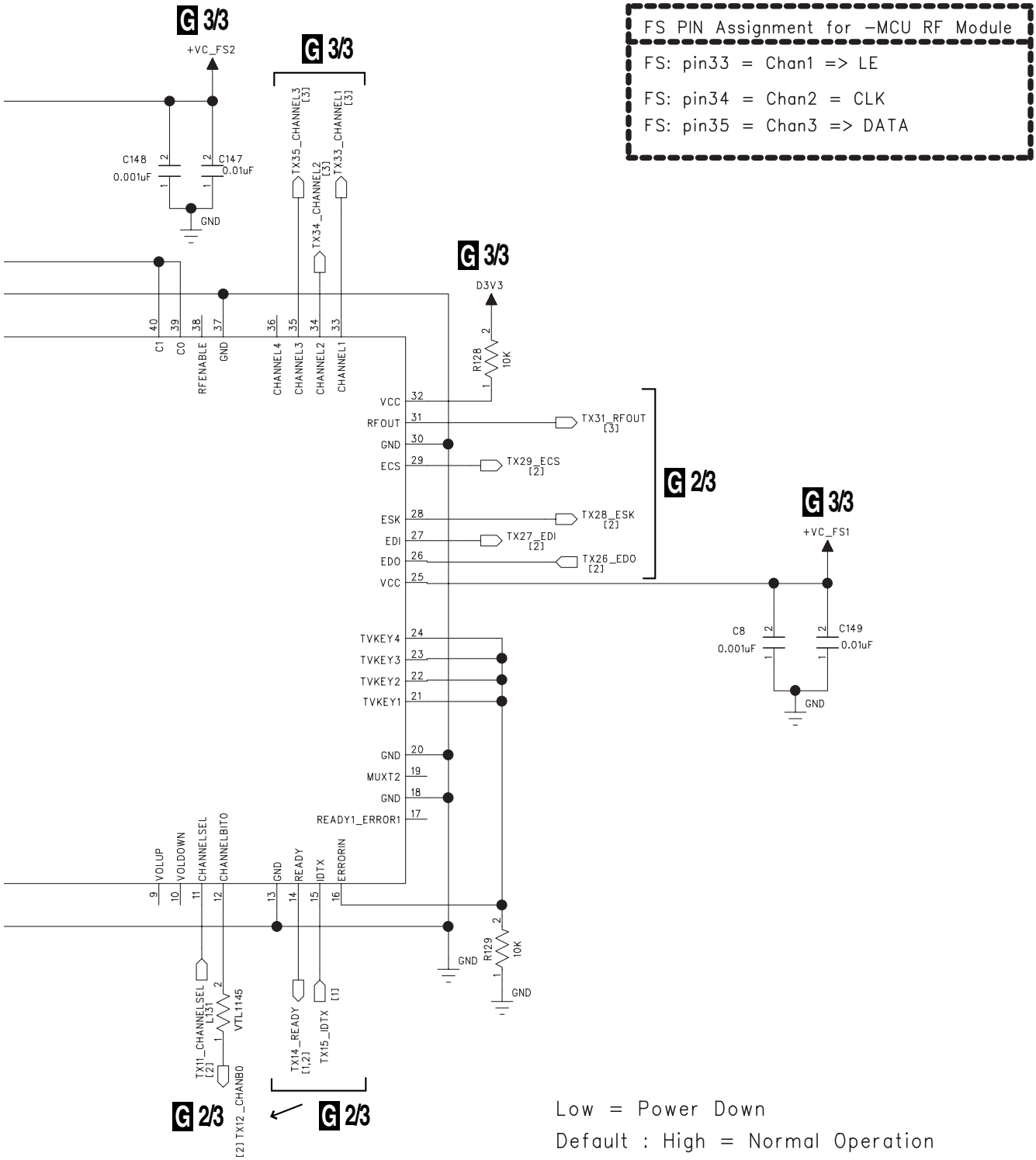
G 1/3

FS PIN Assignment for –MCU RF Module

FS: pin33 = Chan1 => LE

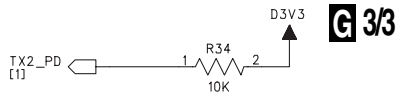
FS: pin34 = Chan2 = CLK

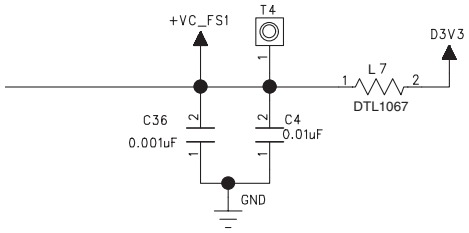
FS: pin35 = Chan3 => DATA



Low = Power Down

Default : High = Normal Operation

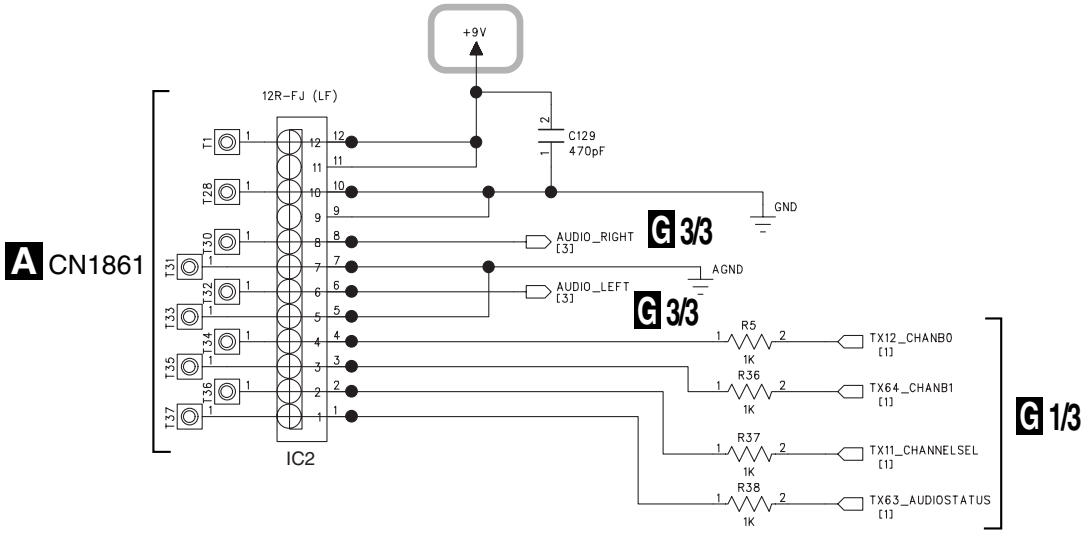


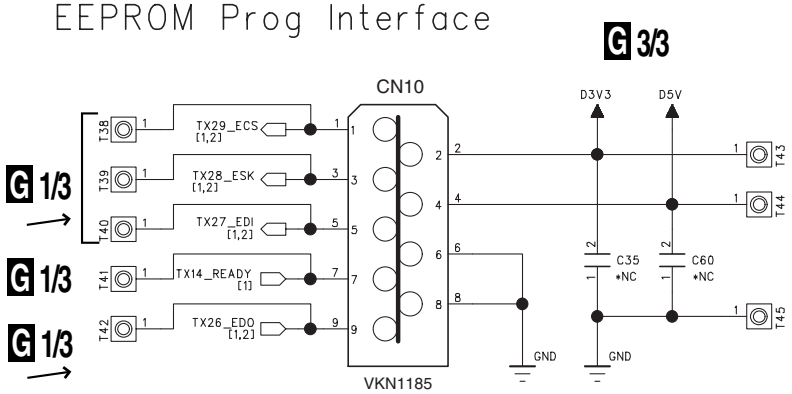


G 1/3

3.7 TX MODULE(2/3)

G 2/3 TX MODULE(2/3) (AXF7010)



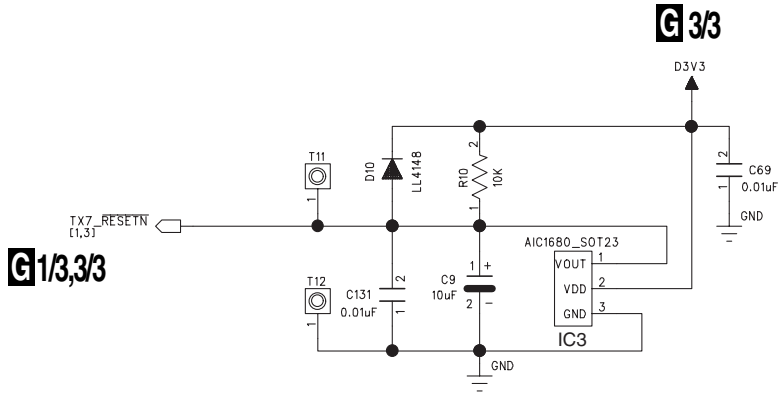


G 2/3

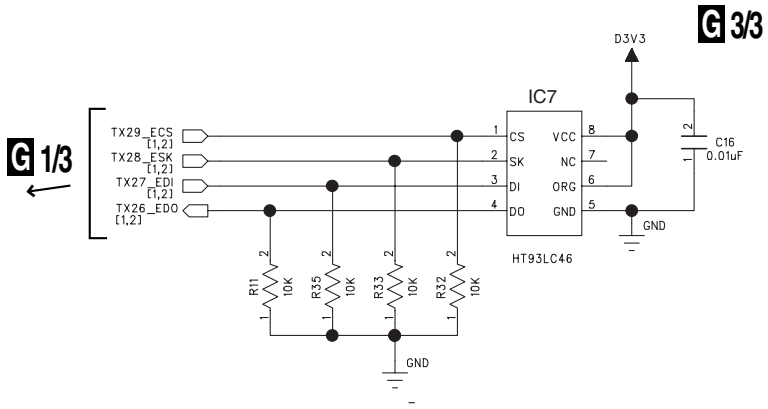
: The power supply is shown with the marked box.

TX Interface Connector
Power IN = +9VDC
Audio IN Left & Right (1Vrms)
channel no bit1 & 0 = Pin64 & 12 FS2105TX
channelSel = pin11 from FS2105TX
Audiostatus = pin63 from FS2105TX

System PowerOn Reset



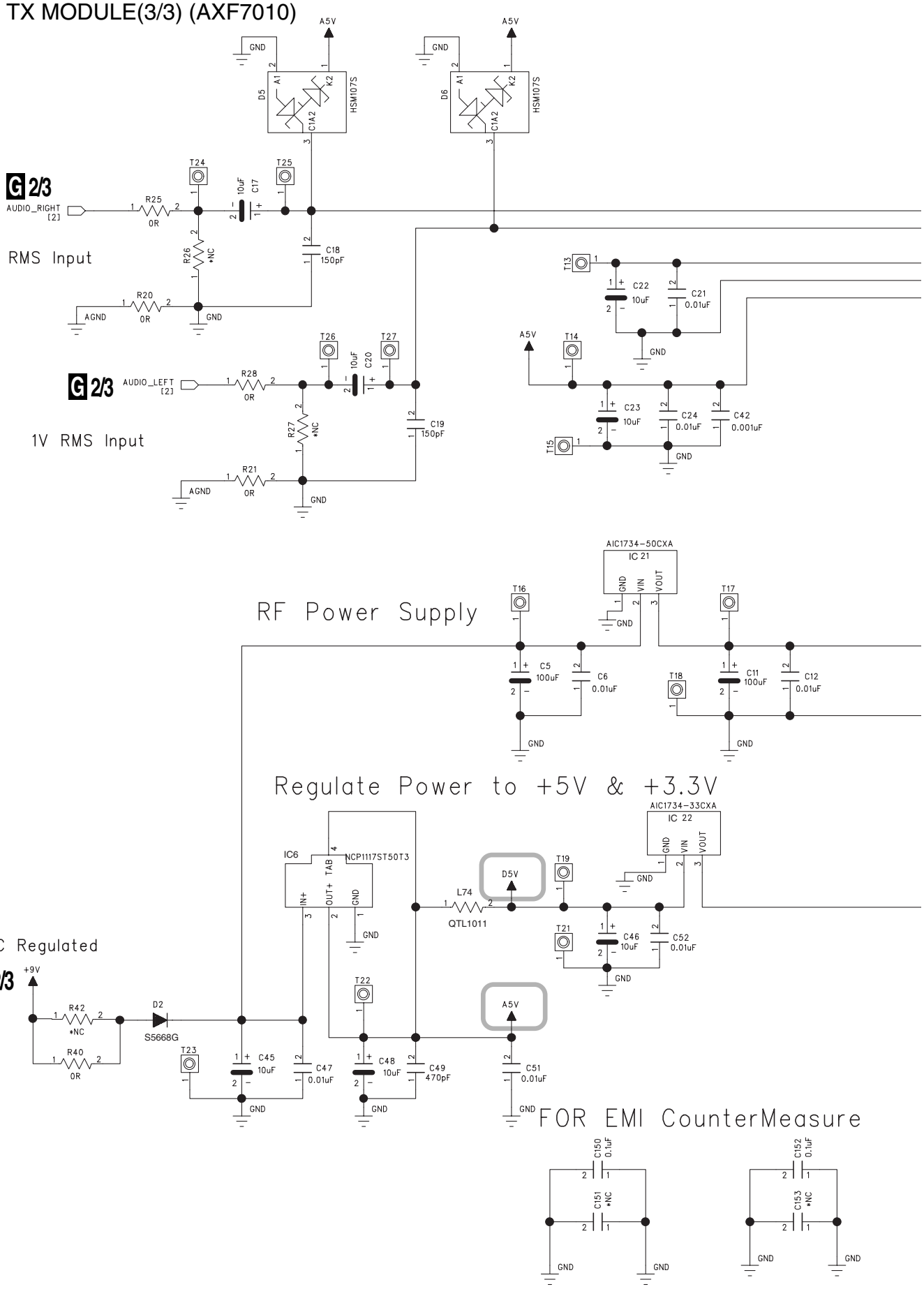
EEPROM for FS



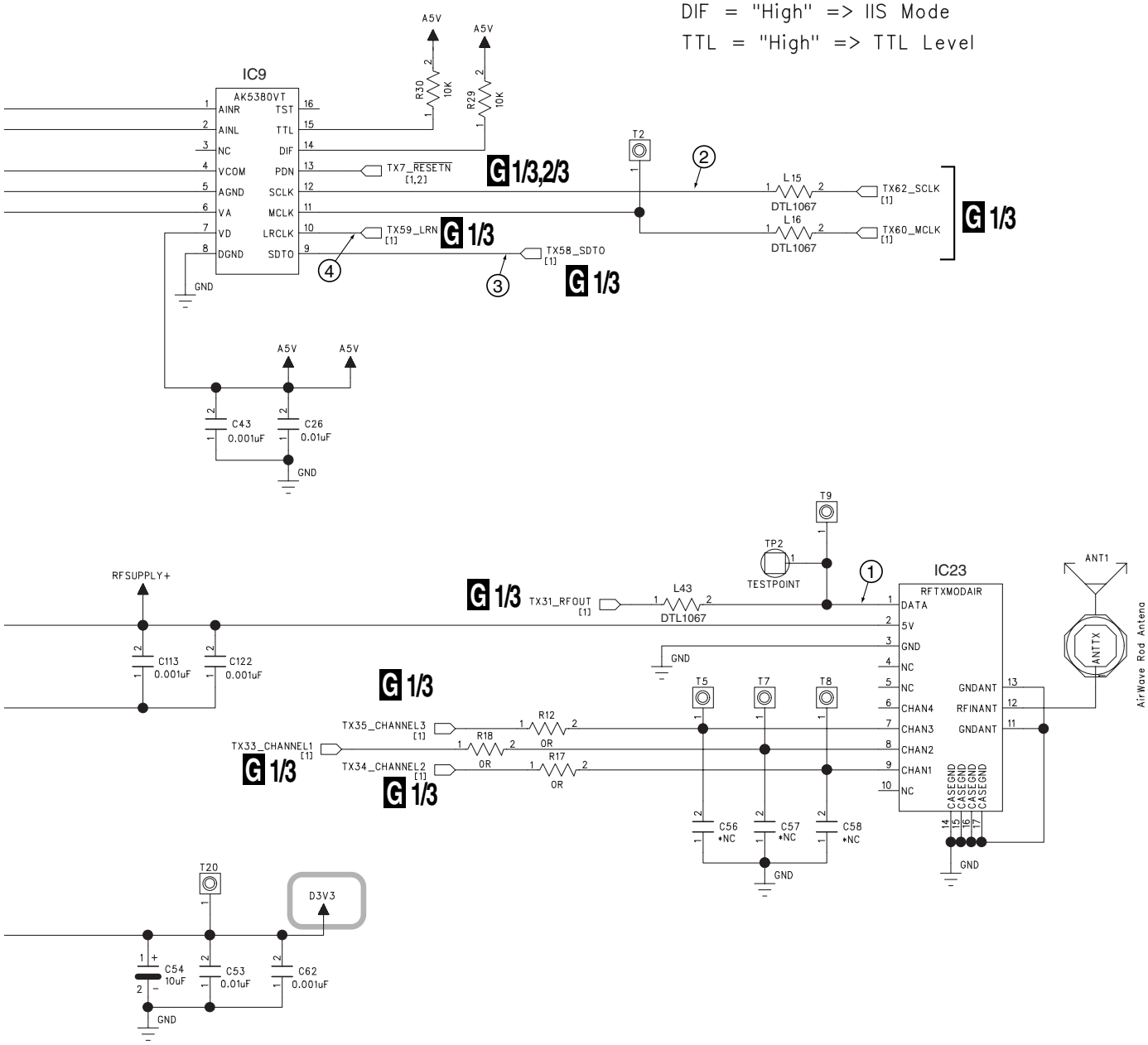
G 2/3

3.8 TX MODULE(3/3)

G 3/3 TX MODULE(3/3) (AXF7010)



G 3/3



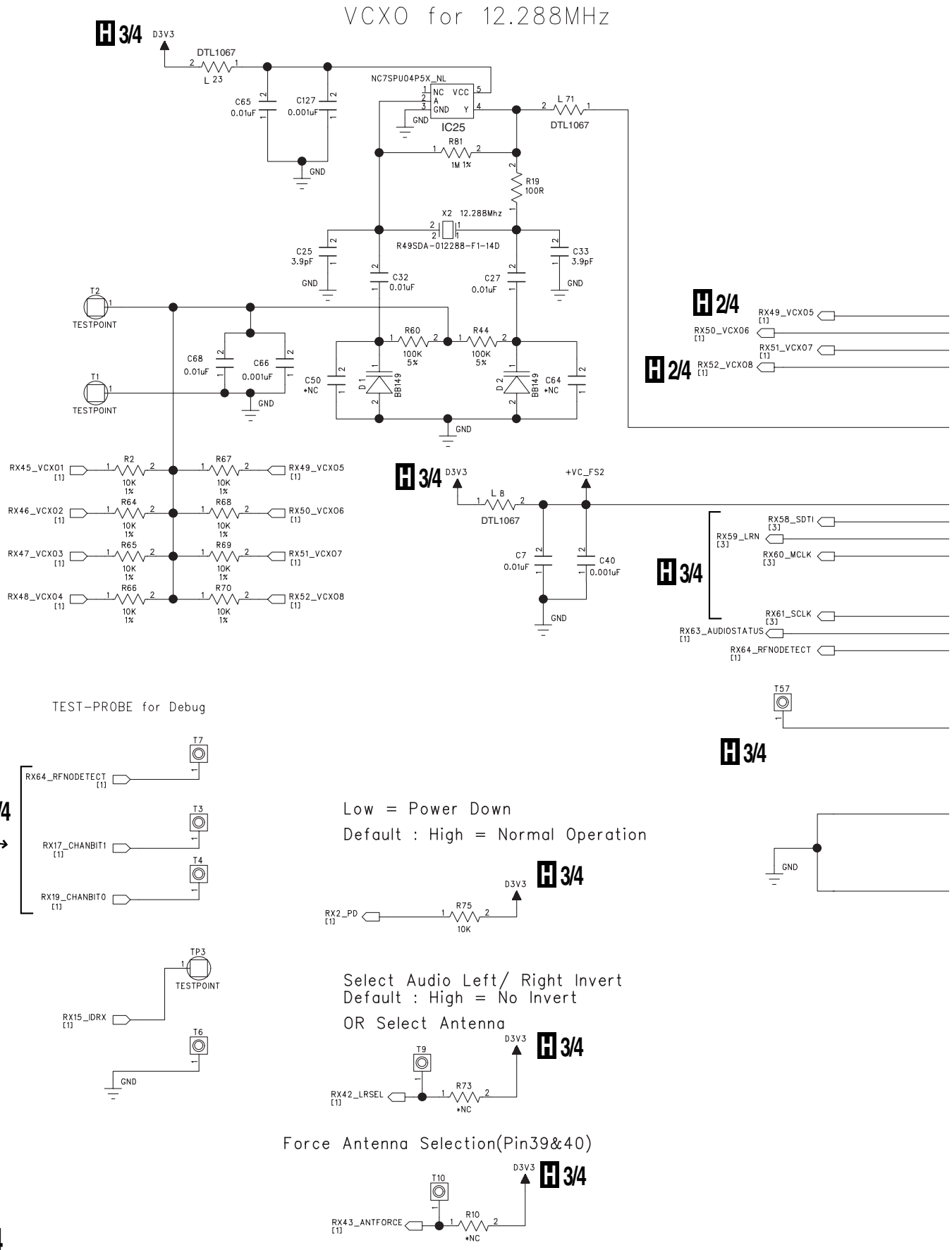
FS2105TX for –MCU RF Module	AW RF Minus MCU Module Pin Assignment
FS: pin34 = Chan2 => CLK FS: pin33 = Chan1 => LE FS: pin35 = Chan3 => DATA	AW: Chan1 = Clk AW: Chan2 = LE AW: Chan3 = DATA

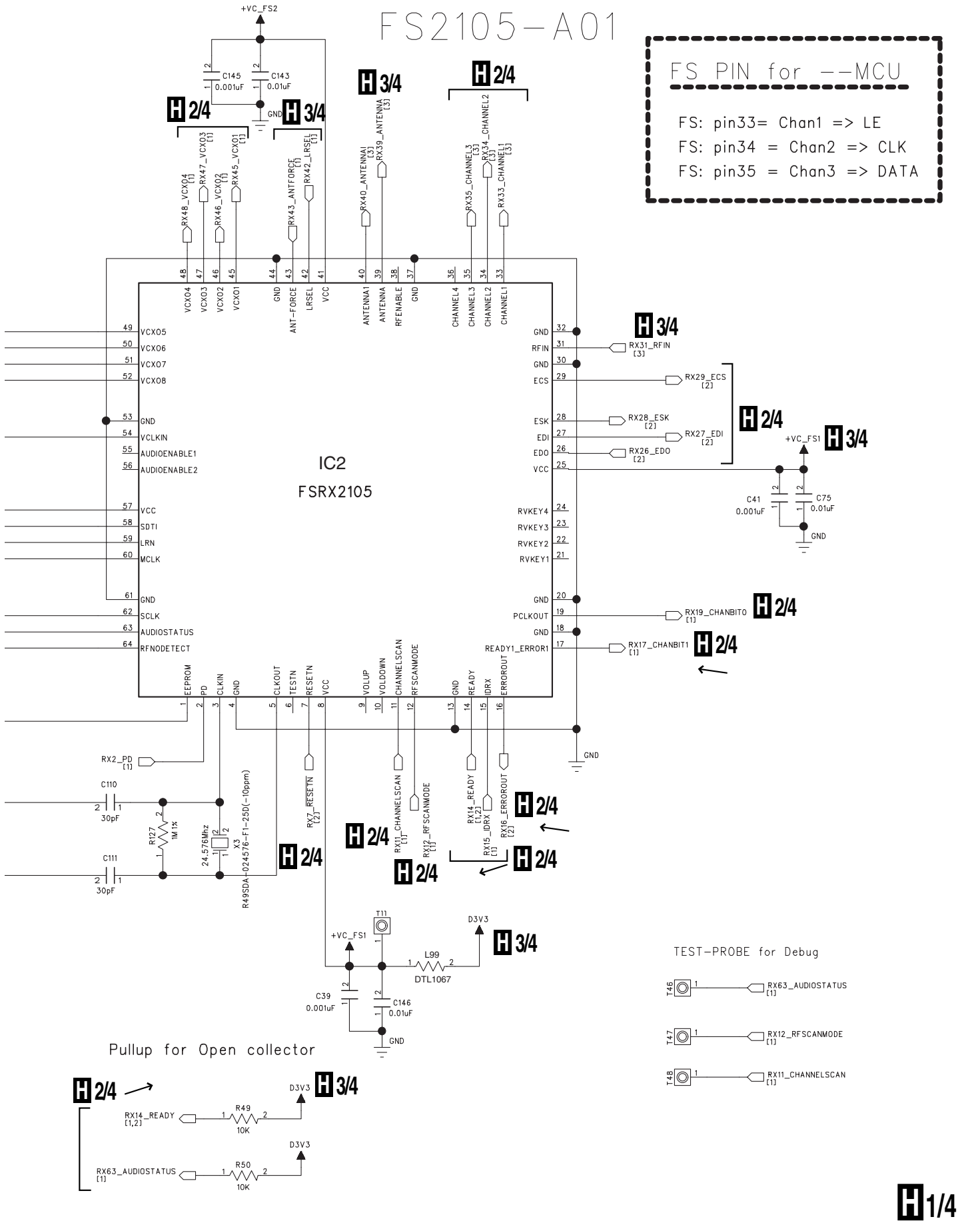
: The power supply is shown with the marked box.

G 3/3

3.9 RX MODULE(1/4)

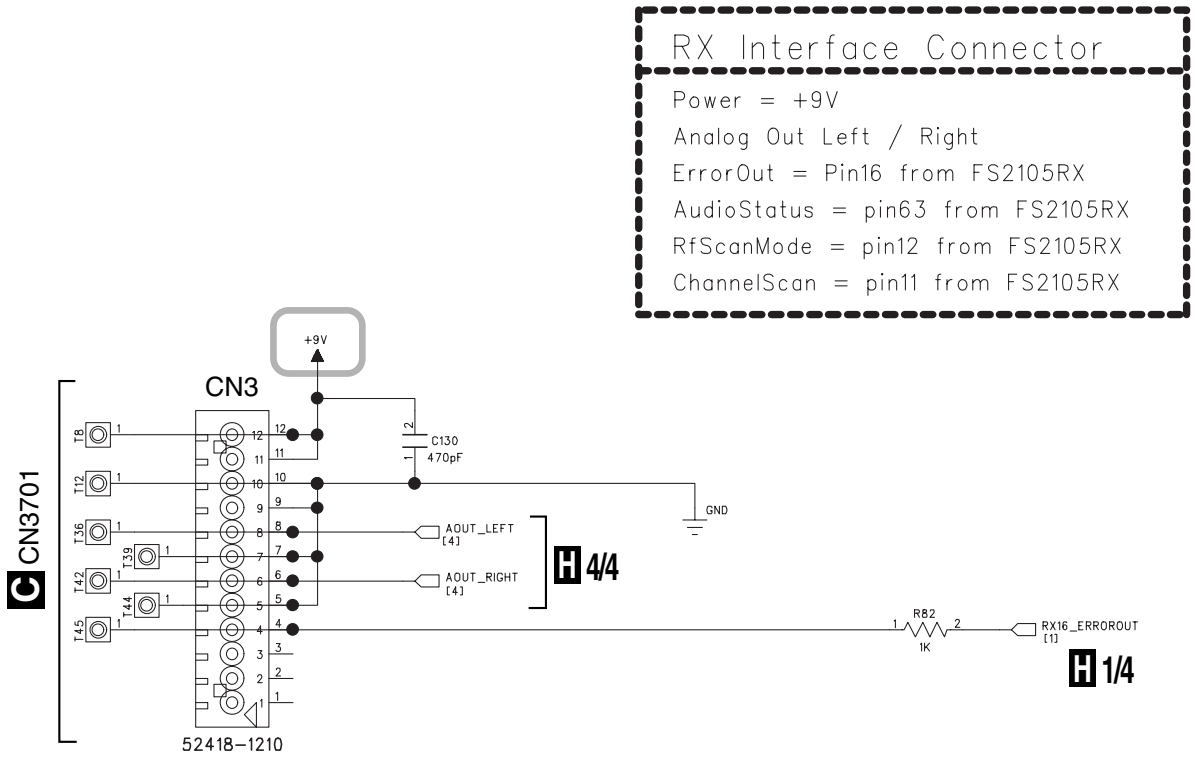
H 1/4 RX MODULE(1/4) (AXF7011)



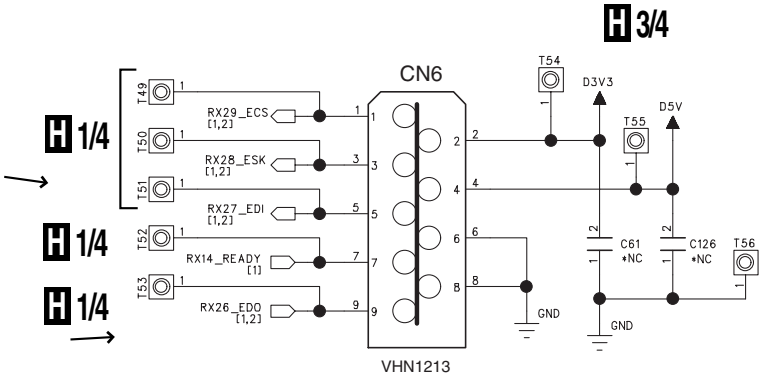

FS2105-A01
FS PIN for --MCU
FS: pin33= Chan1 => LE
FS: pin34 = Chan2 => CLK
FS: pin35 = Chan3 => DATA
IC2
FSRX2105
+VC_FS2
+VC_FS1
D3V3
GND
C145 0.001uF
C143 0.01uF
C41 0.001uF
C75 0.01uF
C110 30pF
C111 30pF
R127 1M 1%
X3 24.576Mhz
024576-F1-25D(-10ppm)
R49SDA
L99 DTL1067
C39 0.001uF
C146 0.01uF
R49 10K
R50 10K
T11
T46
T47
T48
TEST-PROBE for Debug
RX63_AUDIOSTATUS [1]
RX12_RFSCANMODE [1]
RX11_CHANNELSCAN [1]
RX14_READY [1,2]
RX63_AUDIOSTATUS [1]
Pullup for Open collector
H 1/4
H 2/4
H 3/4

3.10 RX MODULE(2/4)

H 2/4 RX MODULE(2/4) (AXF7011)

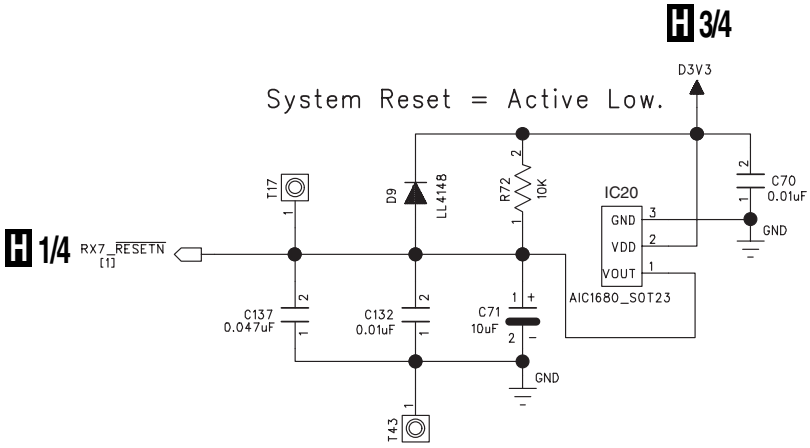


EEPROM Programming Interface

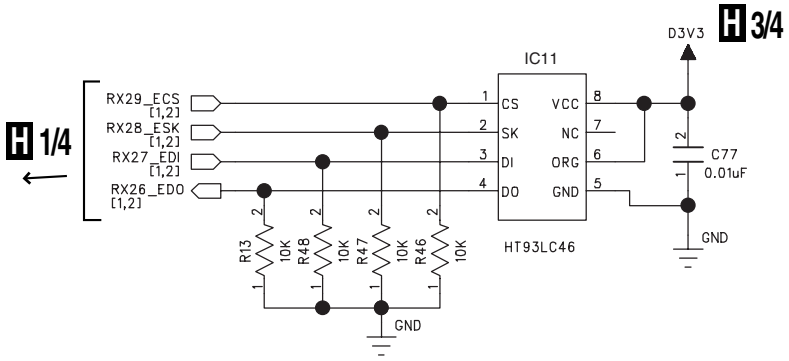


H 2/4

: The power supply is shown with the marHed box.



EEPROM for FS



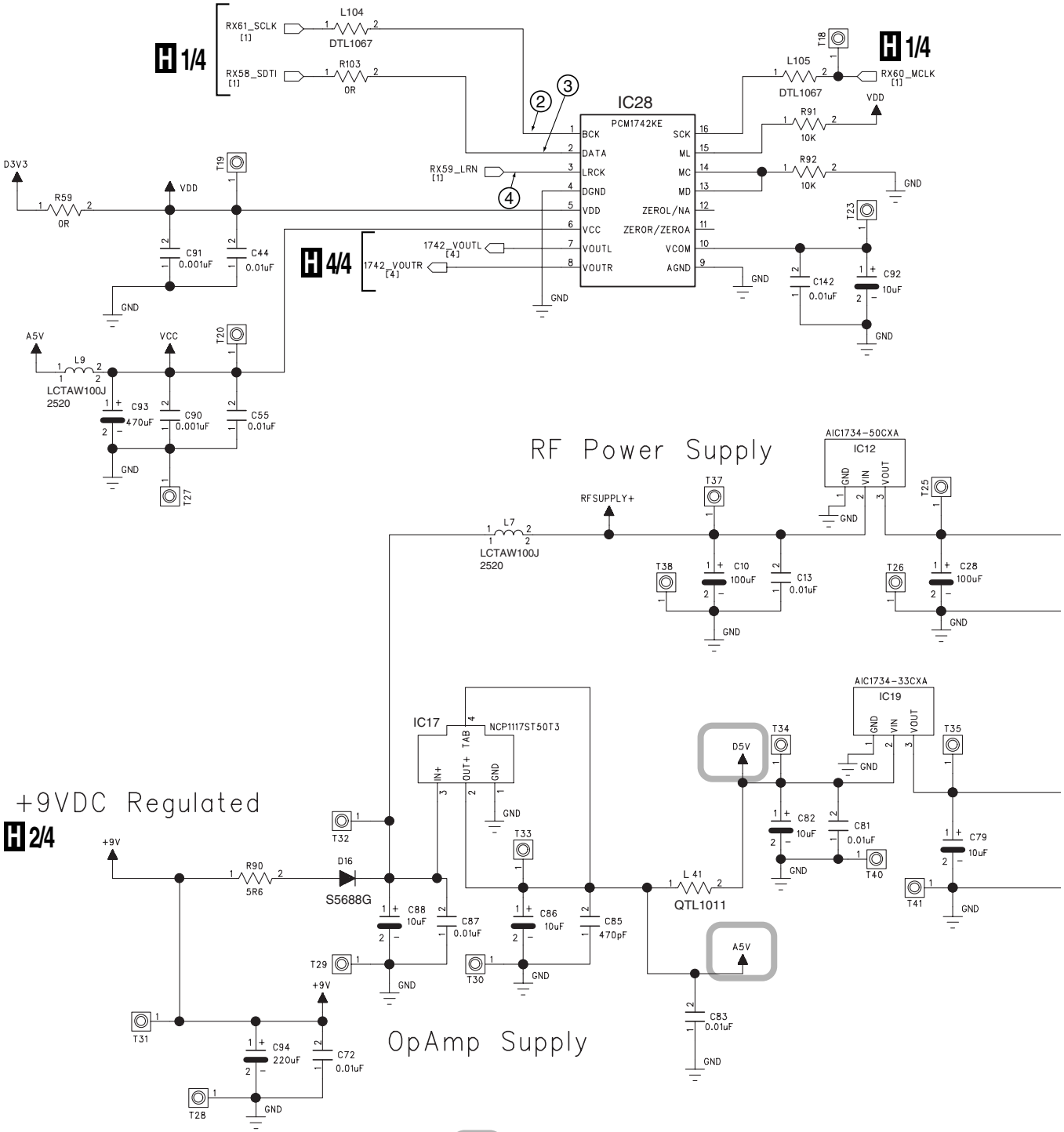
3.11 RX MODULE(3/4)

PCM1742KE @ StandAlone Mode

Default Resigiter Setting :

Reg 16, 17 = 0db, no digital Attenuation
Reg 18 = Mute Disable
Reg 18 = 64 FS Over Sampling Rate
Reg 19 = Dac1 and Dac2 Enable
Reg 19 = De-Emphasis Disable
Reg 19 = 24 bit, Left Justified Audio Data

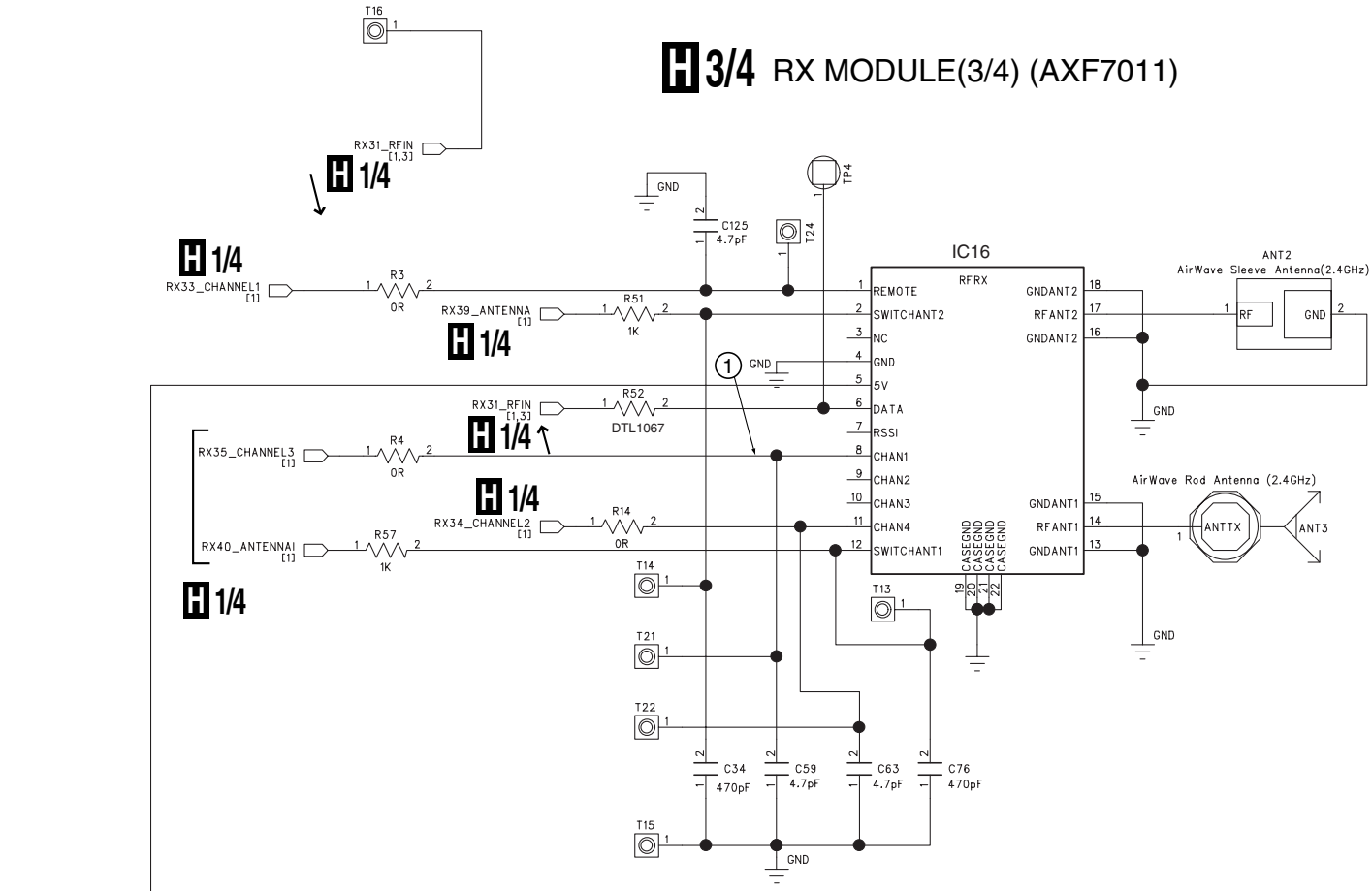
Reg 20 = Sharp Roll off for Digital Filter
Reg22 = L/R Channel Independent for Zero Flag Function
Reg 22 = Normal output Phase
Reg 22 = Active High for Zero Flag



H 3/4

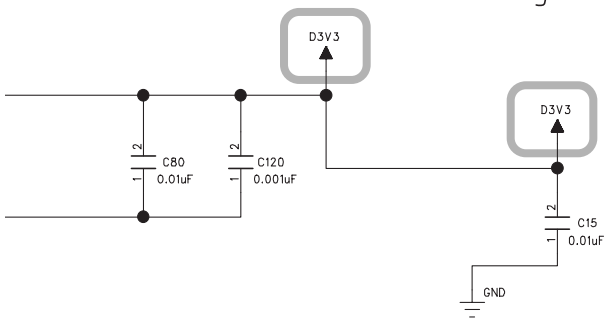
: The power supply is shown with the marHed box.

H 3/4 RX MODULE(3/4) (AXF7011)



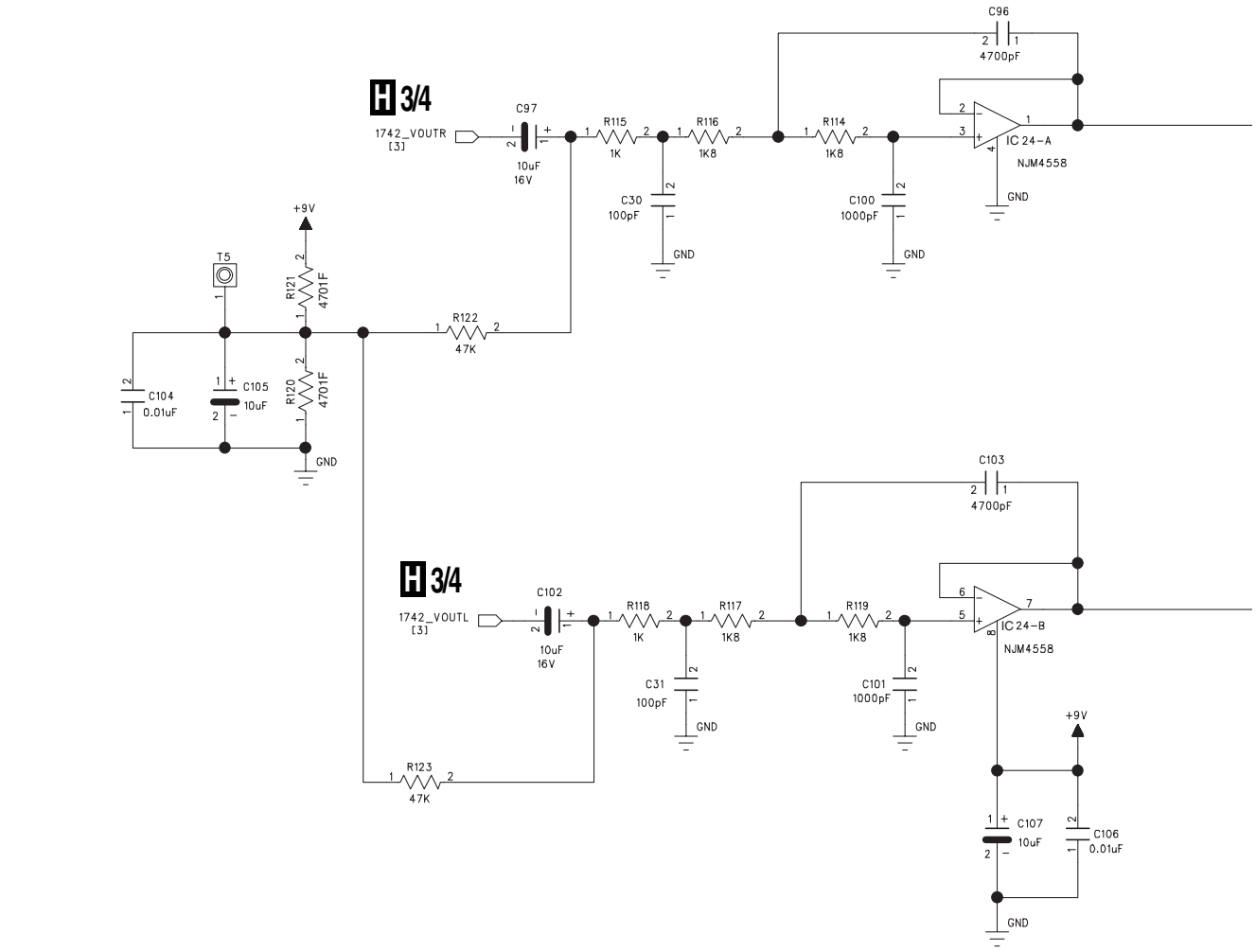
FS2105RX for --MCU	AW PINS for --MCU
FS: pin33= Chan1 => LE	AW: Remote / Unused = LE
FS: pin35 = Chan3 => DATA	AW: Chan1 = Data
FS: pin34 = Chan2 => CLK	AW: Chan4 = CLK

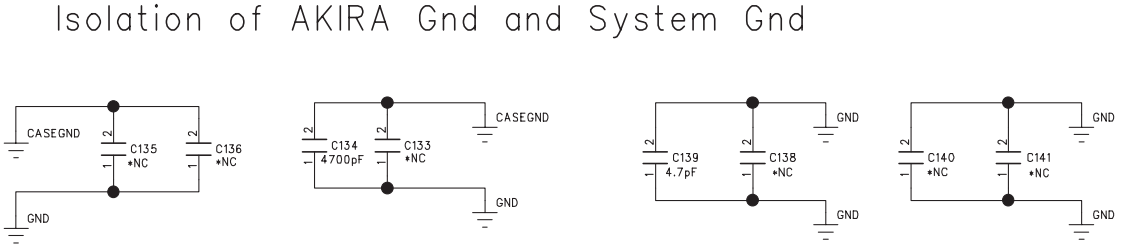
Positive Power Regulation to +5V and +3.3V



3.12 RX MODULE(4/4)

H 4/4 RX MODULE(4/4) (AXF7011)

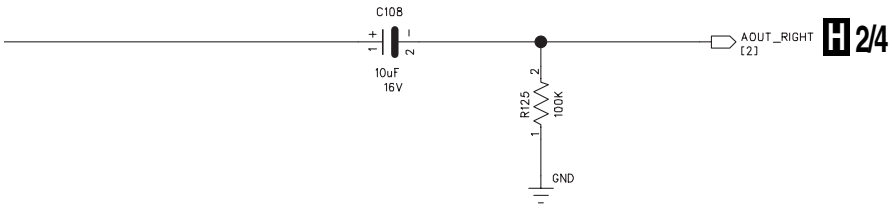




A

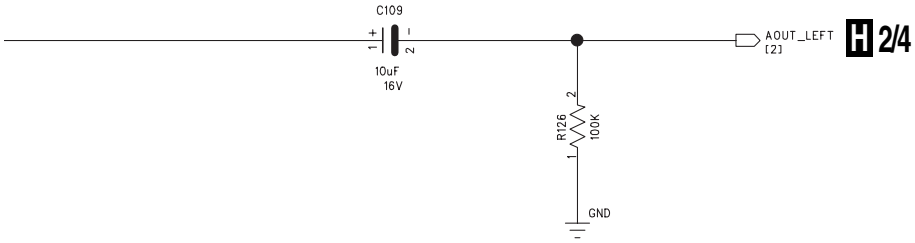
B

1Vrms Output



C

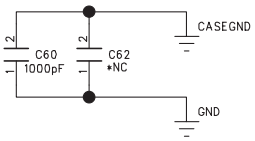
1Vrms Output



D

E

*Spare



F

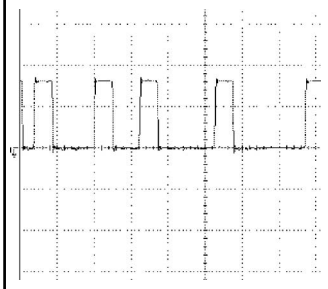
H 4/4

3.13 WAVEFORMS

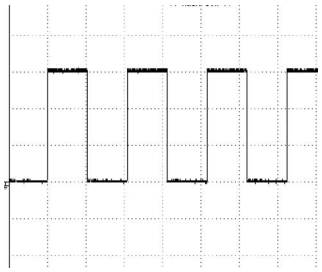
Note : The encircled numbers denote measuring point in the schematic diagram.

G TX MODULE

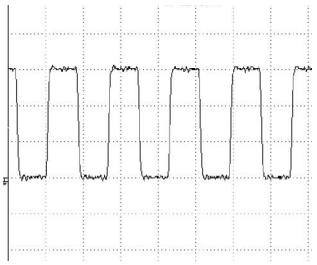
① **IC23-Pin1**
V : 2V/div. H : 500nsec/div.



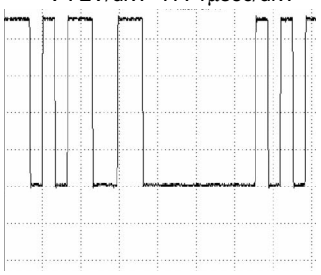
④ **IC9-Pin10**
V : 2V/div. H : 10µsec/div.



② **IC9-Pin12**
V : 2V/div. H : 200nsec/div.

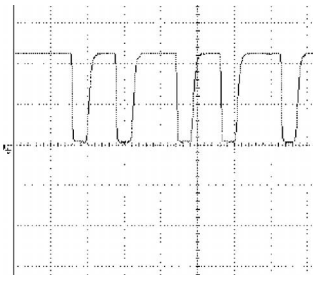


③ **IC9-Pin9**
V : 2V/div. H : 1µsec/div.

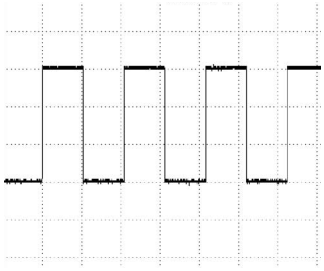


H RX MODULE

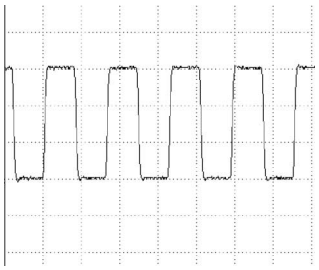
① **IC16-Pin6**
V : 2V/div. H : 500nsec/div.



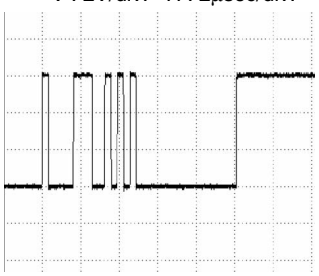
④ **IC28-Pin3**
V : 2V/div. H : 10µsec/div.



② **IC28-Pin1**
V : 2V/div. H : 200nsec/div.



③ **IC28-Pin2**
V : 2V/div. H : 2µsec/div.



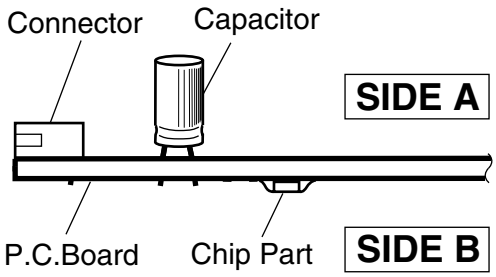
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

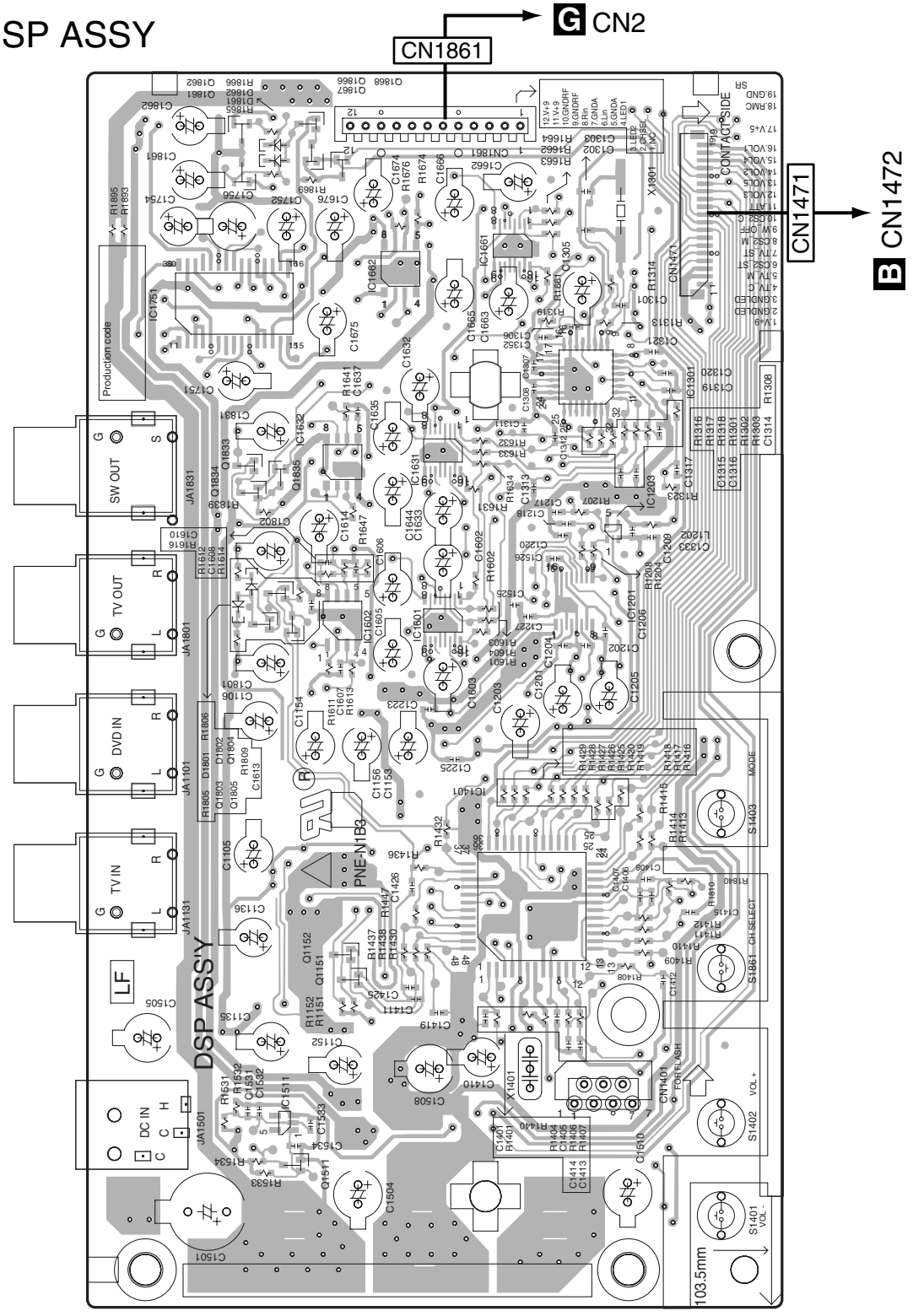
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 DSP ASSY

SIDE A **SIDE A**

A DSP ASSY



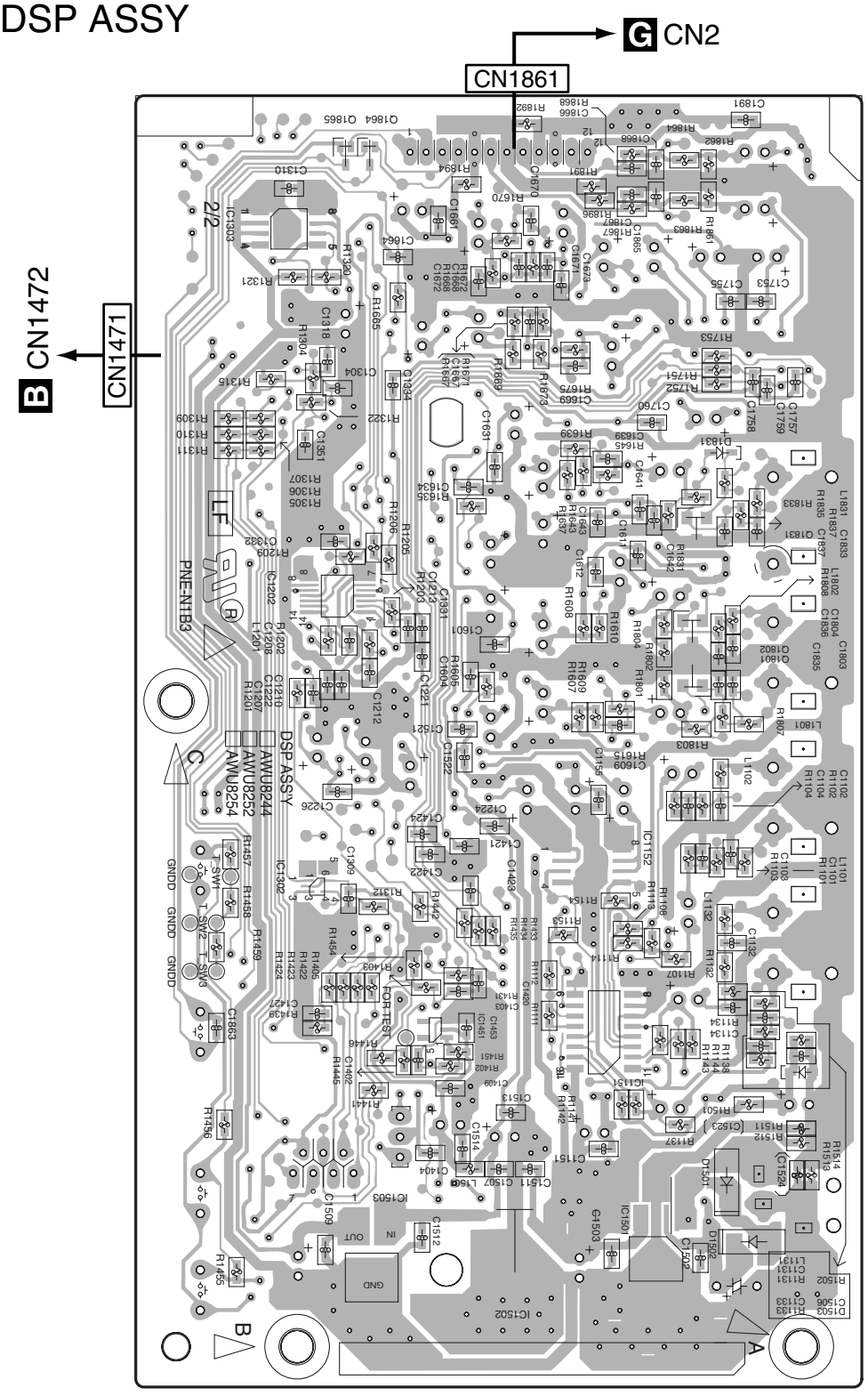
(ANP7521-B)

IC1751 Q1833 Q1862 Q1861 Q1804 Q1834 Q1805 Q1803 Q1835 Q1152 Q1151 IC1632 Q1511 IC1511 Q1866 Q1868 IC1631 Q1867 IC1601 IC1662 IC1602 IC1661 IC1401 IC1201 IC1203 IC1301

SIDE B

SIDE B

A DSP ASSY



(ANP7521-B)

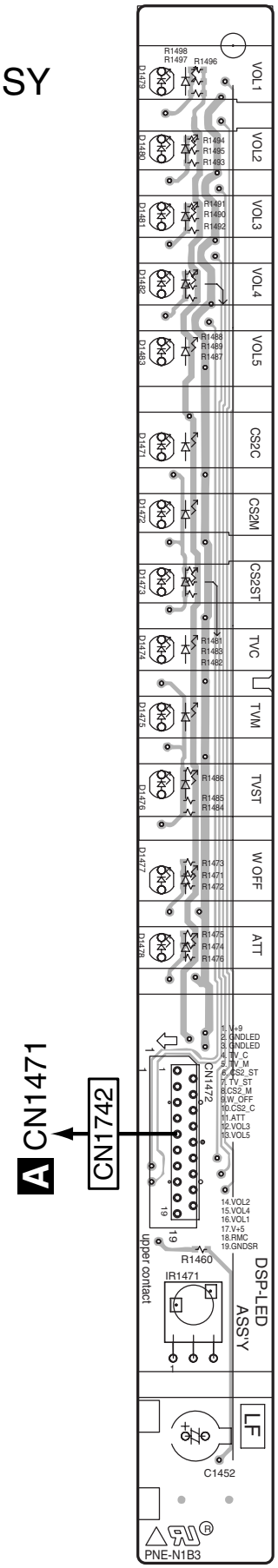
IC1202 IC1303 IC1302 Q1865 IC1503 Q1864 IC1451 IC1502 IC1501 IC1152 IC1151 Q1802 Q1831 Q1801

4.2 DSP-LED ASSY

SIDE A

SIDE A

B DSP-LED ASSY



(ANP7521-B)

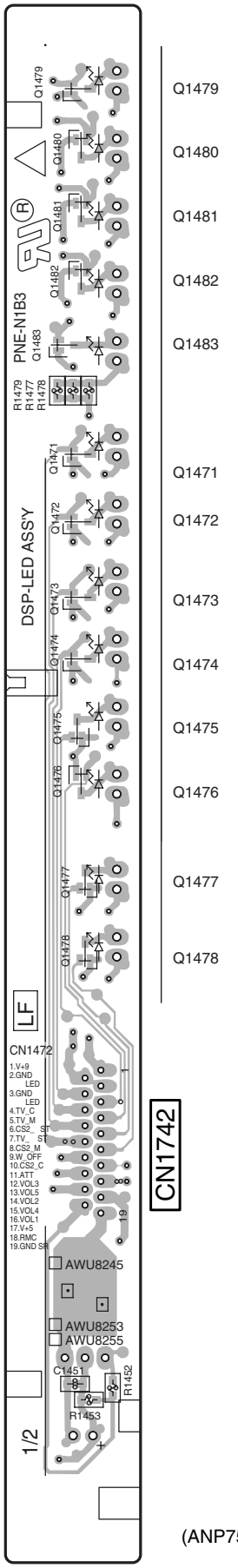
B

B

SIDE B

SIDE B

B DSP-LED ASSY



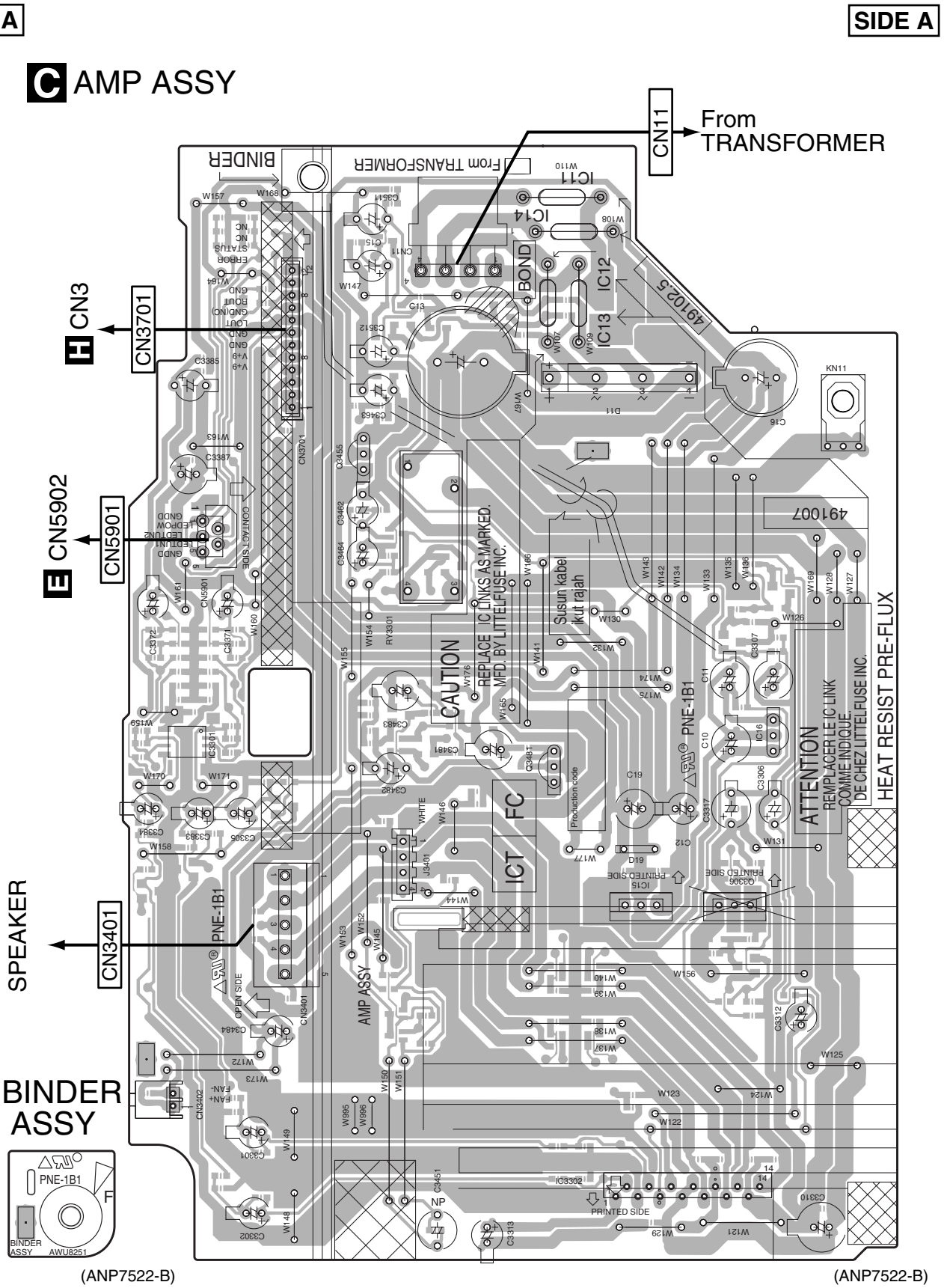
(ANP7521-B)

A B C D E F

B

B

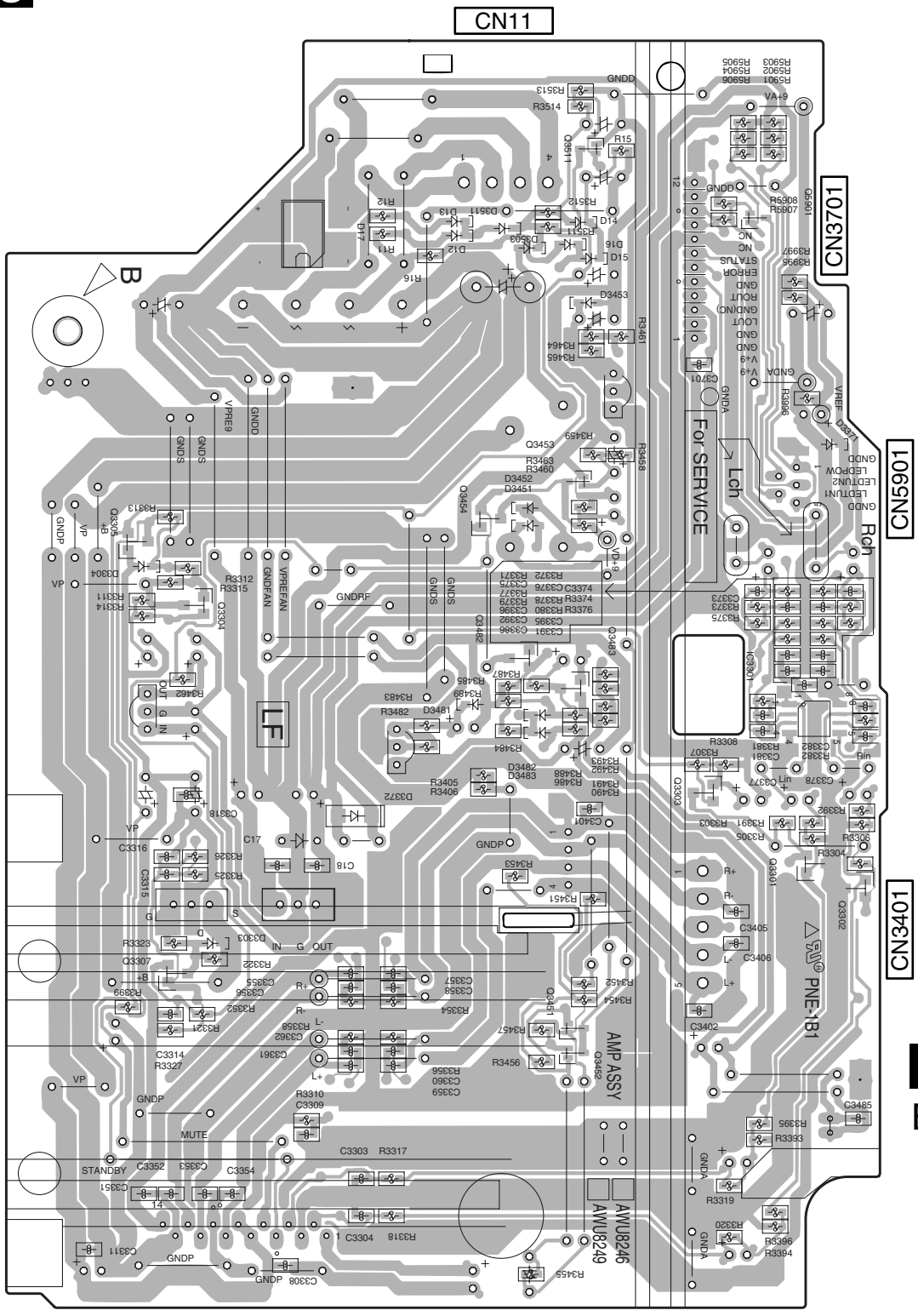
4.3 AMP and BINDER ASSY



SIDE B

SIDE B

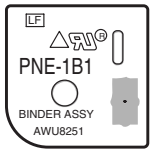
C AMP ASSY



(ANP7522-B)

F

BINDER ASSY



(ANP7522-B)

Q3305 Q3304 Q3454 Q3453 Q3511 Q3483 Q3303 Q3301 Q5901
Q3307 Q3482 Q3451 Q3452 IC3301 Q3302

C F

C F

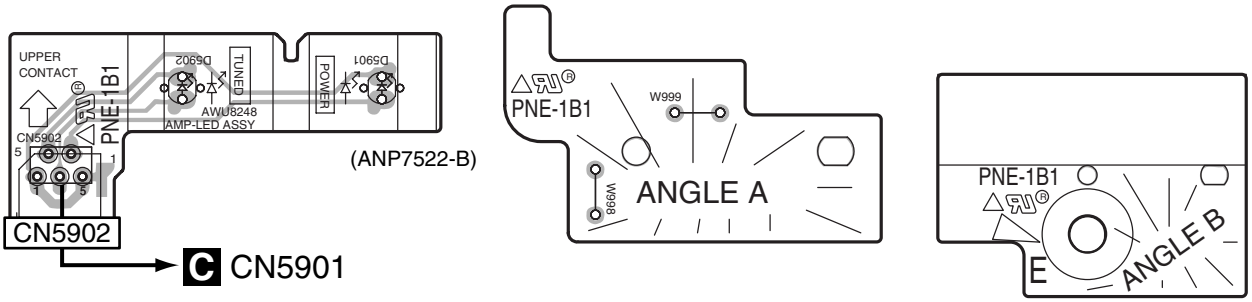
5 6 7 8

4.4 PRIMARY and AMP-LED ASSYS

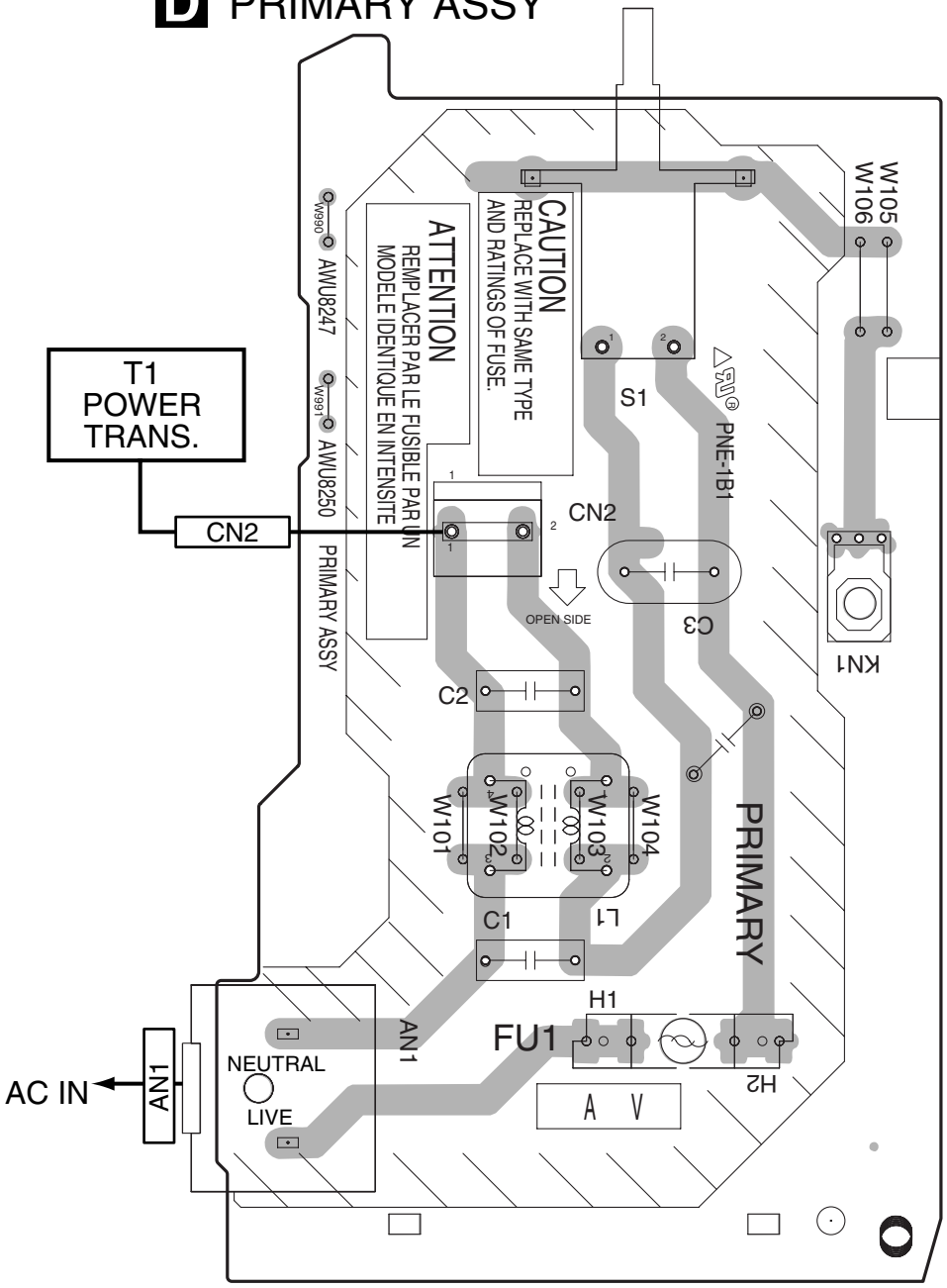
SIDE A

SIDE A

E AMP-LED ASSY



D PRIMARY ASSY



(ANP7522-B)

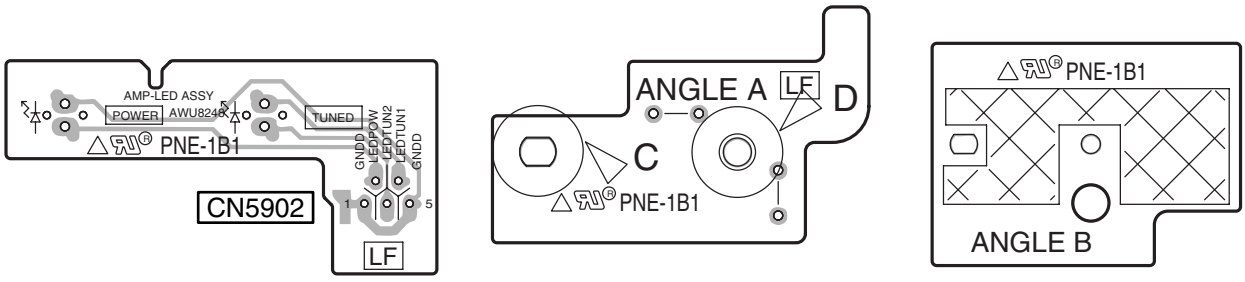
D E

D E

SIDE B

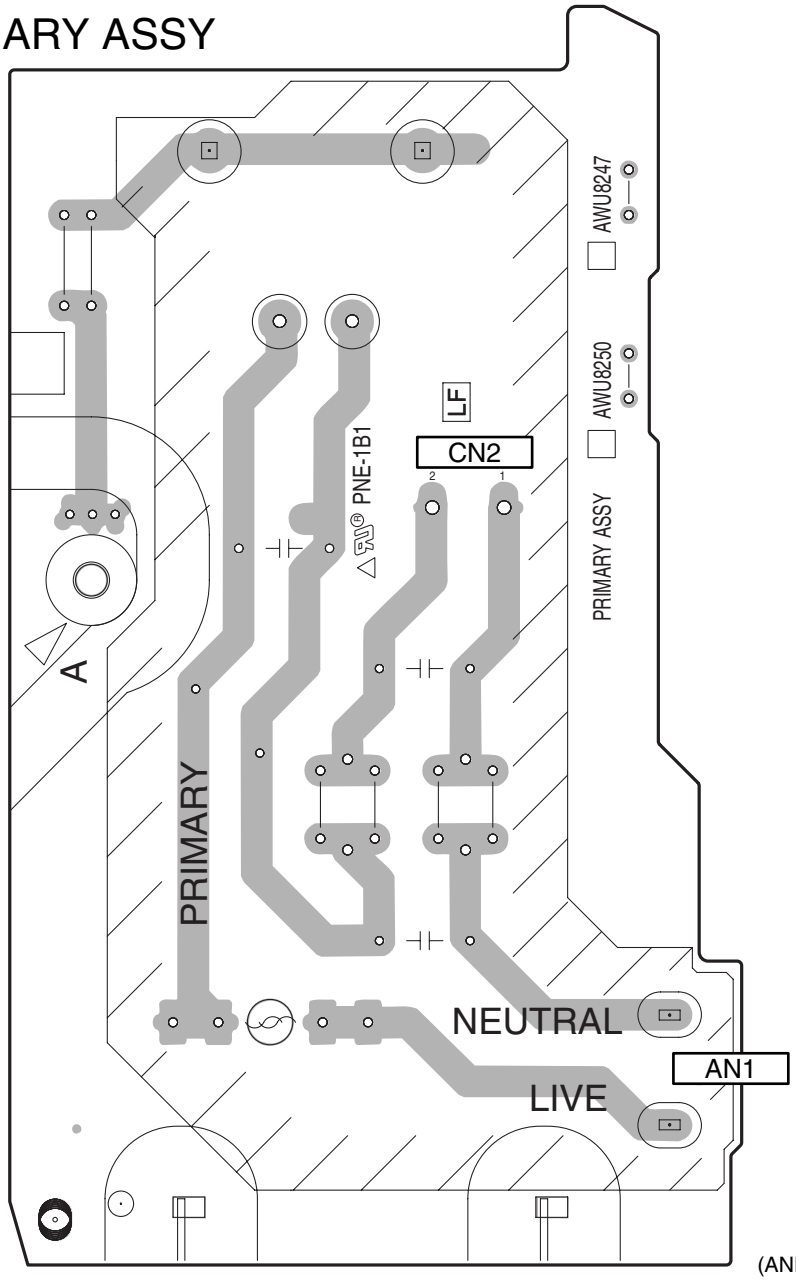
SIDE B

E AMP-LED ASSY



(ANP7522-B)

D PRIMARY ASSY



(ANP7522-B)

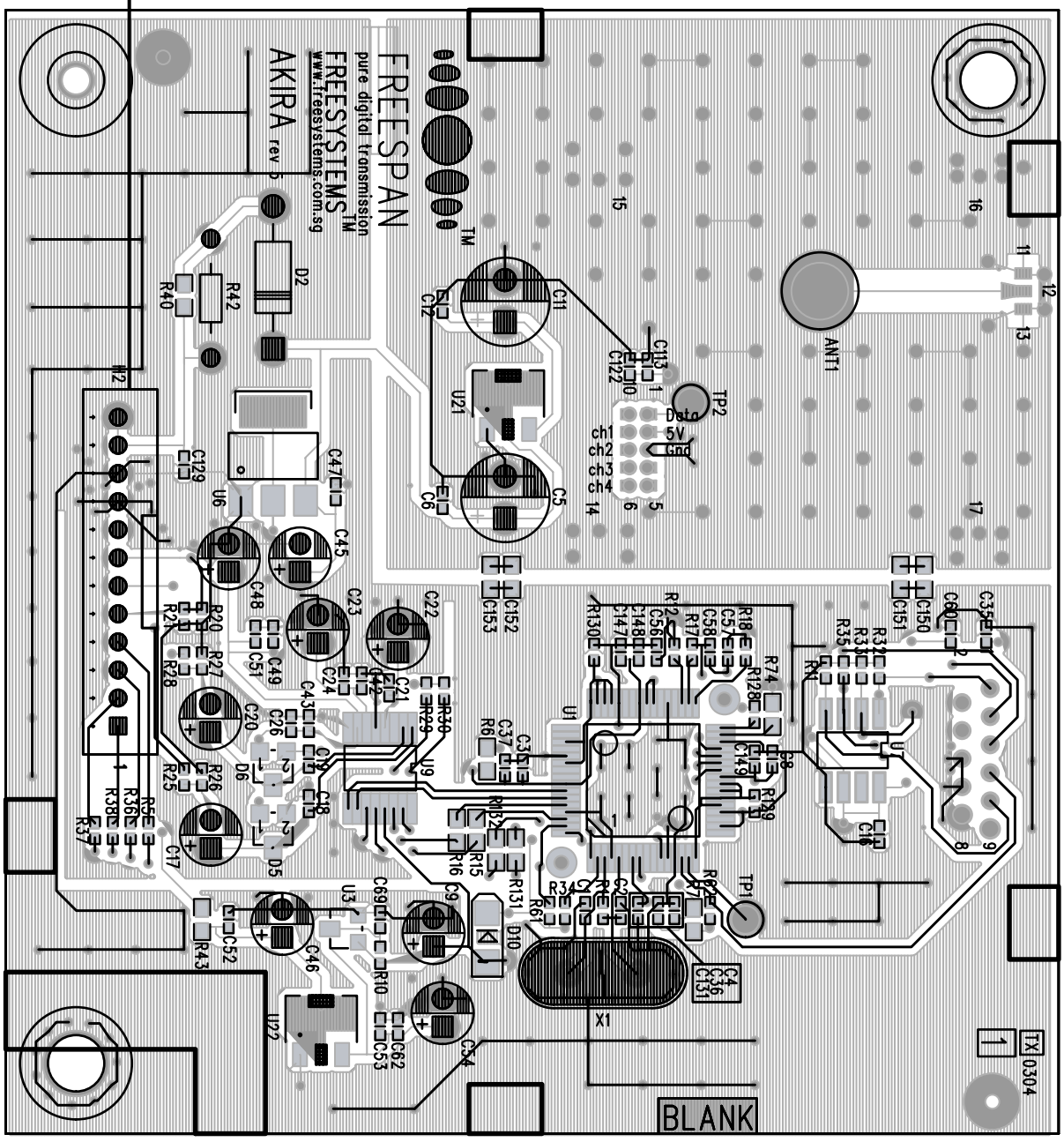
4.5 TX MODULE

SIDE A **SIDE A**

A CN1861

H2

G TX MODULE



U6 U22 U3 U9 U21 U1 U7

G **G**

SIDE B

SIDE B

A

B

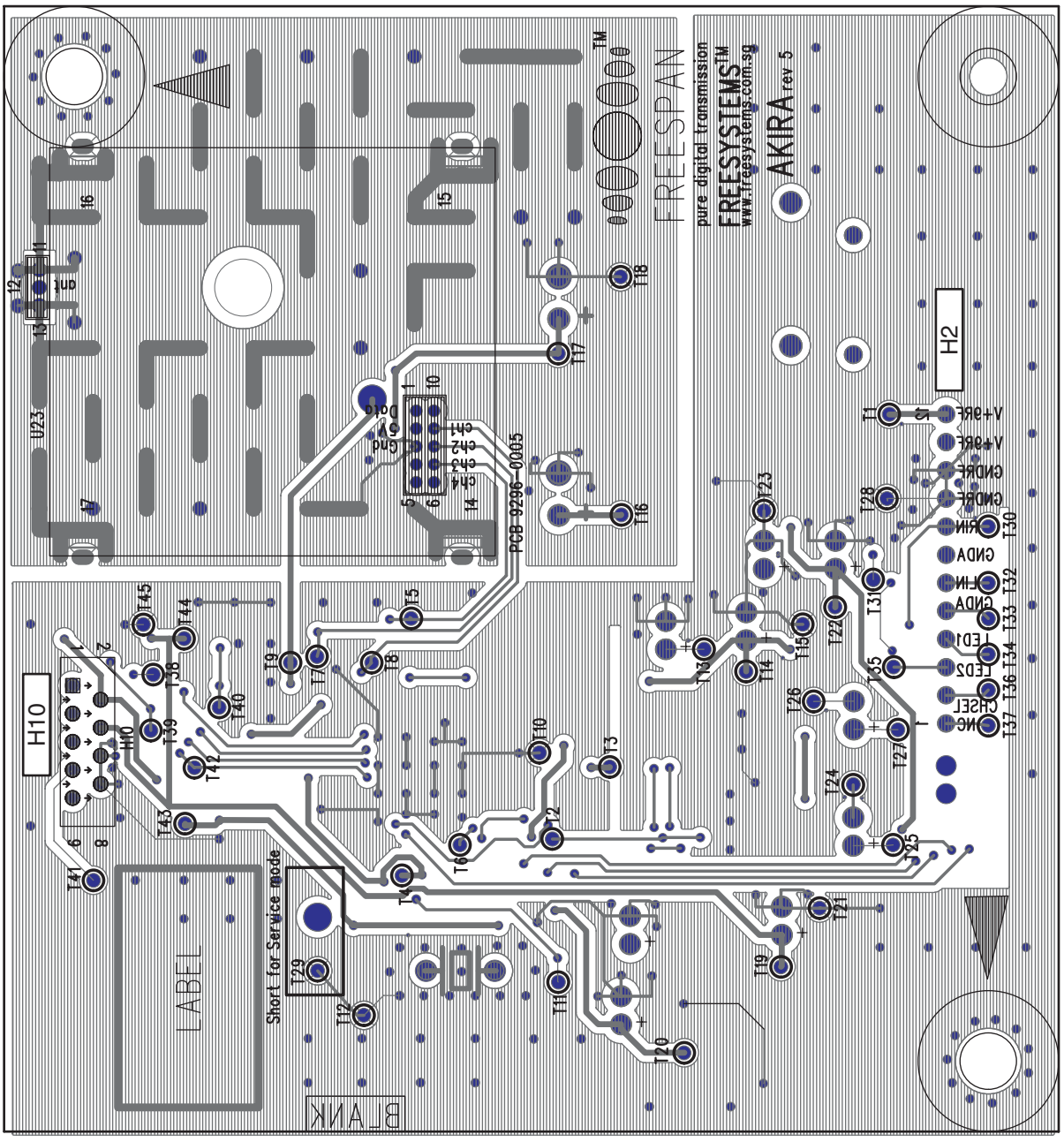
C

D

E

F

G TX MODULE

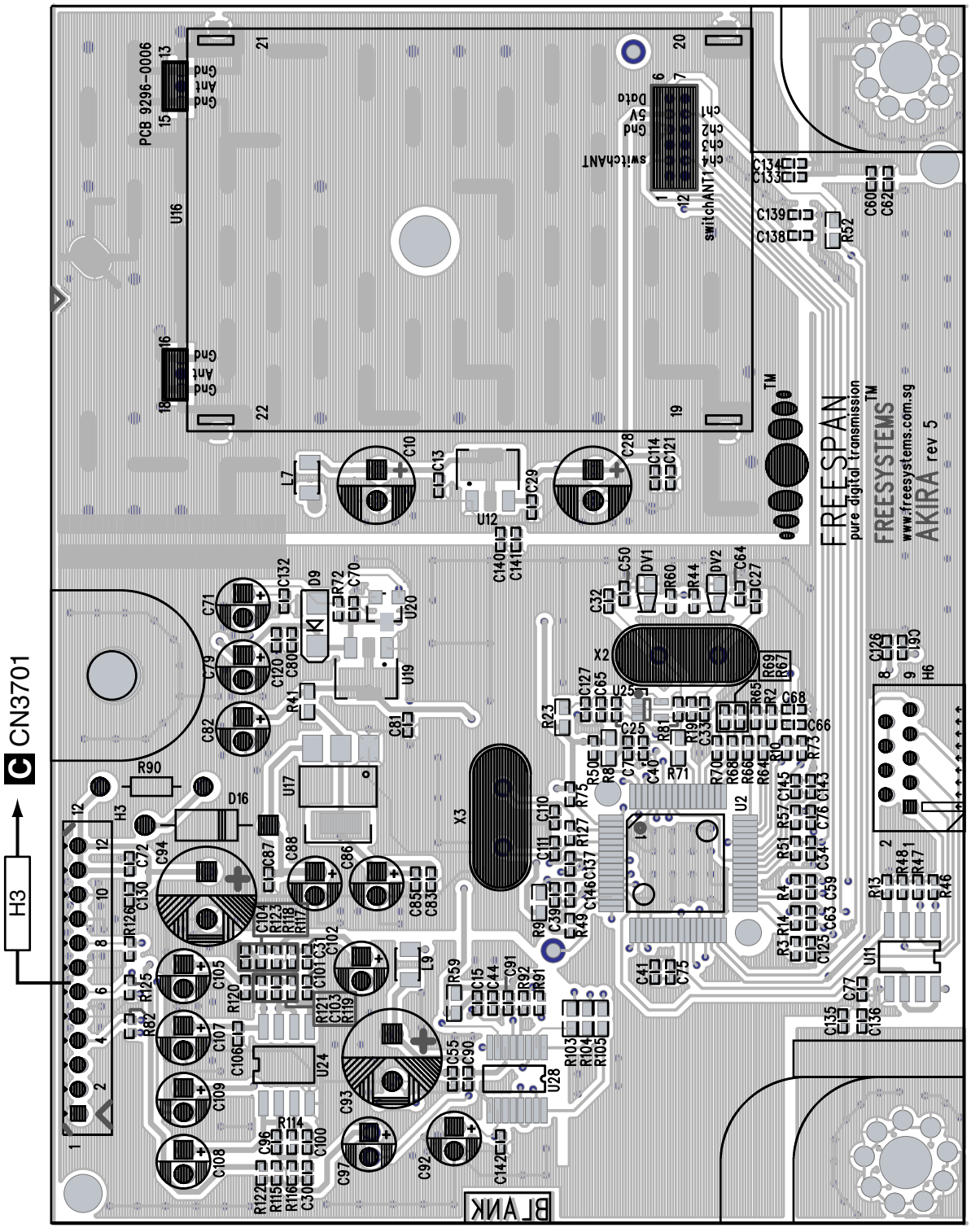


4.6 RX MODULE

SIDE A

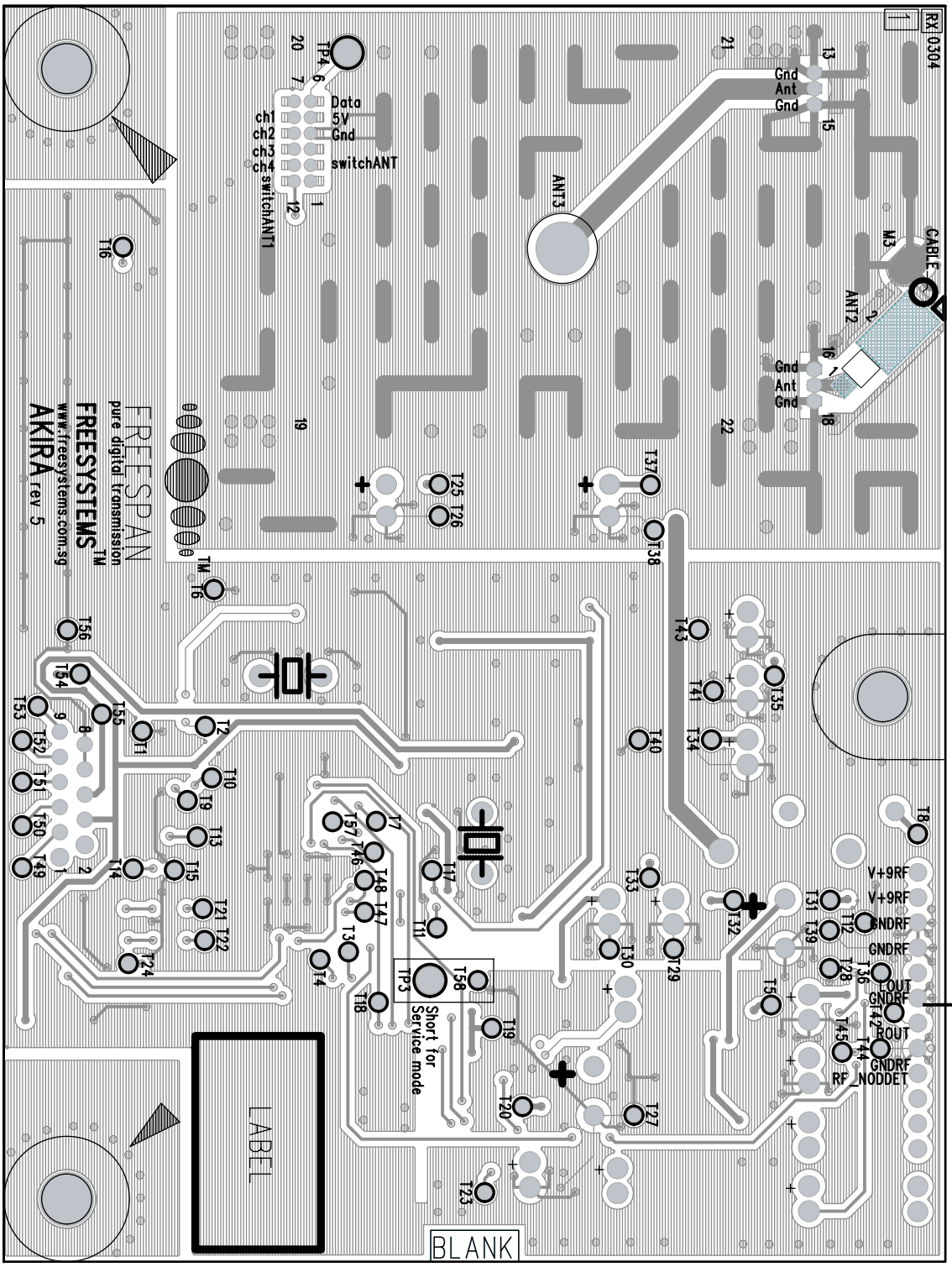
SIDE A

RX MODULE



SIDE B

H RX MODULE



5. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*

● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10[1]* →	*561*	····· *RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10[3]* →	*473*	····· *RD1/4PU 4 7 3 J*
0.5 Ω	→ *R50*		····· *RN2H R 5 0 K*
1 Ω	→ *1R0*		····· *RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10[1]* →	*5621*	····· *RN1/4PC 5 6 2 1 F*

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
NSP	1	..COMPLEX ASSY	AWM7954
	2	..AMP ASSY	AWU8246
	2	..PRIMARY ASSY	AWU8247
	2	..AMP-LED ASSY	AWU8248
	2	..BINDER ASSY	AWU8251
NSP	1	..MAIN ASSY	AWM7951
	2	..DSP ASSY	AWU8244
	2	..DSP-LED ASSY	AWU8245
	1	..TX MODULE	AXF7010
	1	..RX MODULE	AXF7011

A DSP ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1201		AK5357VT
⚠	IC1501		BA09SFP
	IC1152, IC1632, IC1662		BA4558F-HT
	IC1151		BU4052BCF
	IC1751		LC75342M
	IC1602		NJM2115M
	IC1503		NJM2391DL1-25
	IC1502		NJM78M05DL1A
	IC1301		NJU26150
	IC1601, IC1631, IC1661		PCM1754DBQ
	IC1401		PDC118A
	IC1303		PDL019A8
	IC1451, IC1511		PST3242
	IC1202		TC74VHCT08AFT
	IC1302		TC7SET08FU
	IC1203		TC7SH08FU
	Q1801, Q1802, Q1831, Q1861, Q1862		2SD2114K
	Q1803, Q1833, Q1866		DTA143EUA
	Q1511, Q1804, Q1834, Q1867		DTC114TUA
	Q1151, Q1152, Q1805, Q1835		DTC124EUA
	Q1864, Q1865, Q1868		DTC124EUA
⚠	D1501, D1502		1SR154-400
	D1801, D1802, D1831, D1861, D1862		1SS355
	D1503		UDZS4R7(B)

SWITCHES AND RELAYS

Mark	No.	Description	Part No.
	S1401-S1403, S1861		VSG1024

CAPACITORS

Mark	No.	Description	Part No.
	C1212, C1213, C1218, C1311		CCSRCH100D50
	C1401		CCSRCH101J50
	C1103, C1104, C1133, C1134		CCSRCH470J50
	C1352		CCSRCH471J50
	C1302, C1303		CCSRCH7R0D50
	C1105, C1106, C1135, C1136		CEAT100M50
	C1152-C1154, C1201, C1205, C1305		CEAT100M50
	C1410, C1602, C1603, C1605, C1606		CEAT100M50
	C1614, C1632, C1633, C1635, C1644		CEAT100M50
	C1662, C1663, C1665, C1666		CEAT100M50
	C1674-C1676, C1751, C1752, C1754		CEAT100M50
	C1801, C1802, C1831, C1861, C1862		CEAT100M50
	C1756		CEAT101M25
	C1203		CEAT2R2M50
	C1156		CEAT470M25
	C1504, C1508		CEAT470M50
	C1501		CEAT471M25
	C1505, C1510		CEAT471M6R3
	C1208, C1803, C1804		CKSRYB102K50
	C1151, C1155, C1207, C1209, C1210		CKSRYB103K50
	C1220, C1223-C1225, C1227, C1304		CKSRYB103K50
	C1309, C1331, C1332, C1334		CKSRYB103K50
	C1402-C1404, C1408, C1409, C1506		CKSRYB103K50
	C1521-C1523, C1533, C1534, C1601		CKSRYB103K50
	C1604, C1611-C1613, C1631, C1634		CKSRYB103K50
	C1641-C1643, C1661, C1664		CKSRYB103K50
	C1671-C1673, C1753, C1755, C1833		CKSRYB103K50
	C1863		CKSRYB103K50
	C1202, C1204, C1206, C1301		CKSRYB104K25
	C1306-C1308, C1310, C1453, C1502		CKSRYB104K25
	C1511, C1512		CKSRYB104K25
	C1531, C1532		CKSRYB105K10
	C1609, C1610, C1667-C1670		CKSRYB152K50
	C1866, C1867		CKSRYB152K50
	C1607, C1608		CKSRYB222K50
	C1637, C1639		CKSRYB473K50

RESISTORS

Mark	No.	Description	Part No.
	R1531		RS1/16S1003D
	R1532		RS1/16S5602D
	Other Resistors		RS1/16S###J

OTHERS

Mark	No.	Description	Part No.
	CN1861	FJ CONNECTOR 12P	12PL-FJ
	JA1501	DC POWER JACK	AKN7038
	X1401	X'TAL OSC.	ASS7034
	JA1101, JA1131, JA1801	2P PIN JACK	BKB1017
	JA1831	1P PIN JACK	VKB1159

Mark	No.	Description	Part No.
	CN1471	19P FFC CONNECTOR	VKN1423
	X1301	X'TAL OSC. (36.8MHz)	VSS1085

B DSP-LED ASSY

SEMICONDUCTORS

	Q1471-Q1483	DTC143EUA
	D1471-D1476, D1478-D1482 (LED)	SLR-343MC
	D1477, D1483 (LED)	SLR-343VC

CAPACITORS

	C1452	CEAL470M10
	C1451	CKSRYB103K50

RESISTORS

	Other Resistors	RS1/16S###J

OTHERS

	CN1472 CONNECTOR	CKS3833
	1471 REMOTE RECEIVER UNIT	GP1UM26XK

E AMP-LED ASSY

SEMICONDUCTORS

	D5901, D5902 (LED)	SLR-343MC

OTHERS

	CN5902 5P FFC CONNECTOR	52044-0545

C AMP ASSY

SEMICONDUCTORS

⚠	IC12, IC13	AEK7047
⚠	IC11, IC14	AEK7049
	IC3301	BA4558F-HT
⚠	IC3302	LA4663
⚠	IC15	NJM78M09FA
	Q3451, Q3452	2SA1576A
	Q3454	2SC2412K
	Q3453, Q3511, Q5901	2SC4081
	Q3455	2SD1858X
	Q3305	DTC114YK
	D12-D16, D3451, D3503, D3511	1SS355
⚠	D11	D3SBA20(B)
⚠	D17	S1WB(A)60SD
	D3304, D3371	UDZS4R7(B)
	D3453	UDZS9R1(B)

SWITCHES AND RELAYS

	RY3301	ASR7019

CAPACITORS

	C3310	CEAL101M25
	C3451	CEANP101M10
	C15, C3306, C3312, C3371, C3372	CEAT100M50
	C19	CEAT101M25
	C12, C3512	CEAT1R0M50
	C3462, C3464	CEAT221M6R3
	C16	CEAT222M25
	C3383, C3384	CEAT2R2M50
	C3313, C3463, C3511	CEAT470M25
	C3387	CEAT471M6R3
	C13	CEAT682M25
	C3301, C3302	CEATR47M50
	C3311, C3386, C3391, C3392	CKSRYB103K50
	C3303, C3304	CKSRYB222K50
	C3375, C3376	CKSRYB223K50
	C3355-C3362	CKSRYB224K16
	C3373, C3374	CKSRYB682K50

RESISTORS

	Other Resistors	RS1/16S###J

OTHERS

	CN5901 5P FFC CONNECTOR	52045-0545
	CN3701 12P PLUG	53290-1210
	CN11 4P POST	B4PS-VH
	CN3401 5P-VH CONNECTOR	B5P-VH
	1, 2 PCB BINDER	VEF1040
	KN11 TERMINAL	VNF1084

D PRIMARY ASSY

SWITCHES AND RELAYS

⚠	S1 PUSH SWITCH	ASG7024

CAPACITORS

⚠	C3 CKA (10000P/AC250V)	ACG7034

OTHERS

	H1, H2 FUSE CLIP	AKR7001
⚠	CN2 CONNECTOR	B2P3-VH
⚠	AN1 AC CORD SOCKET	XKP3042

F BINDER ASSY

OTHERS

	10 PCB BINDER	VEF1040

G TX MODULE

SEMICONDUCTORS

	IC7 EEPROM(PAIR SET)*	AXX7198
	IC1	FS2105-A01
	IC3	AIC1680N-22CU
	IC22 REGULATOR IC(3.3V)	AIC1734-33CXA
	IC21 REGULATOR IC(5V)	AIC1734-50CXA
	IC9 ADC	AK5380VT
	IC6 REGULATOR IC	NCP1117ST50T3
	IC23 RF MODULE(TX/EU)	SPE9104-1005
	D10 DIODE	LL4148
	D2 DIODE	S5688G
	D5,D6 DIODE	HSM107S

COILS

	L15 CHIP SOLID INDUCTOR	DTL1067
	L16 CHIP SOLID INDUCTOR	DTL1067
	L43 CHIP SOLID INDUCTOR	QTL1011
	L6 CHIP SOLID INDUCTOR	DTL1067
	L7 CHIP SOLID INDUCTOR	DTL1067
	L74 CHIP SOLID INDUCTOR	DTL1067
	L131,L132 CHIP SOLID INDUCTOR	VTL1145

Mark No.	Description	Part No.
CAPACITORS		
C1, C2	CAPACITOR	CCSSCH330J50
C5, C11	ELECT. CAPACITOR	CEAL101M16
C113	CAPACITOR	CCSSYB102K50
C12	CAPACITOR	CCSSYB103K16
C122,C148	CAPACITOR	CCSSYB102K50
C49, C129	CAPACITOR	CCSSYB471K50
C16	CAPACITOR	CCSSYB103K16
C131	CAPACITOR	CCSSYB103K16
C9, C17	ELECT. CAPACITOR	CEAL100M16
C18, C19	CAPACITOR	CCSSCH151J50
C37, C42	CAPACITOR	CCSSYB102K50
C4, C6	CAPACITOR	CCSSYB103K16
C43, C62	CAPACITOR	CCSSYB102K50
C46, C48	ELECT. CAPACITOR	CEAL100M16
C47, C52	CAPACITOR	CCSSYB103K16
C69	CAPACITOR	CKSSYB103K50
C54	ELECT. CAPACITOR	CEAL100M16
C149,C147	CAPACITOR	CCSSYB103K16
C51, C53	CAPACITOR	CCSSYB103K16
C150,C152	CAPACITOR	CCSSYB104K10
RESISTORS		
Other Resistors		RS1/16S###J
OTHERS		
X1	X'TAL OSC.(24.576MHz)	R49SDA-024576-F1-25C
ANT1	ANTENNA	ANT0100-0016
CN2	FJ CONNECTOR 12P	12R-FJ
CN10	9P FFC CONNECTOR	VKN1185

H RX MODULE

SEMICONDUCTORS		
IC11	EEPROM(PAIR SET)*	AXX7198
IC24	IC	NJM4558MD
IC28	DAC	PCM1742KE
IC20	IC	AIC1680N-22CU
IC19	REGULATOR IC(3.3V)	AIC1734-33CXA
IC12	REGULATOR IC(5V)	AIC1734-50CXA
IC17	REGULATOR IC	NCP1117ST50T3
IC25	IC	NC7SPU04P5X
IC2	IC(Audio)	FS2105-A01
IC16	RF MODULE(RX)	SPE9104-1006
D16	DIODE	S5688G
D9	DIODE	LL4148
D1,D2	DIODE	BB149
COILS		
L23	CHIP SOLID INDUCTOR	DTL1067
L104	CHIP SOLID INDUCTOR	DTL1067
L105	CHIP SOLID INDUCTOR	DTL1067
L52	CHIP SOLID INDUCTOR	DTL1067
L41	CHIP SOLID INDUCTOR	QTL1011
L7	CHIP COIL	LCTAW100J2520
L71	CHIP SOLID INDUCTOR	DTL1067
L8	CHIP SOLID INDUCTOR	DTL1067
L9	CHIP COIL	LCTAW100J2520
L99	CHIP SOLID INDUCTOR	DTL1067
CAPACITORS		
C10	ELECT. CAPACITOR	CEAL101M10
C100	CAPACITOR	CKSSYB102K50
C101	CAPACITOR	CKSSYB102K50
C102	ELECT. CAPACITOR	CEAL100M16
C103,C134	CAPACITOR	CKSSYB472K25
C105	ELECT. CAPACITOR	CEAL100M16
C107	ELECT. CAPACITOR	CEAL100M16
C108	ELECT. CAPACITOR	CEAL100M16
C109	ELECT. CAPACITOR	CEAL100M16
C30, C31	CAPACITOR	CCSSCH101J50
C110,C111	CAPACITOR	CCSSCH300J50
C114	CAPACITOR	CKSSYB102K50
C120	CAPACITOR	CKSSYB102K50
C121,C60	CAPACITOR	CKSSYB102K50
C127,C145	CAPACITOR	CKSSYB102K50
C13, C142	CAPACITOR	CKSSYB103K16
C132,C143	CAPACITOR	CKSSYB103K16
C104,C146	CAPACITOR	CKSSYB103K16
C106,C134	CAPACITOR	CKSRYB103K16
C137	CAPACITOR	CKSSYB473K10
C145	CAPACITOR	CKSSYB102K50
C15,C27	CAPACITOR	CKSSYB103K16
C28	ELECT. CAPACITOR	CEAL101M10
C29	CAPACITOR	CKSSYB103K16
C134	CAPACITOR	CKSSYB472K25
C96	CAPACITOR	CKSSYB472K25
C32	CAPACITOR	CKSSYB103K16
C142	CAPACITOR	CKSSYB103K16
C34	CAPACITOR	CKSSYB471K50
C39	CAPACITOR	CKSSYB102K50
C40	CAPACITOR	CKSSYB102K50
C41	CAPACITOR	CKSSYB102K50
C44	CAPACITOR	CKSSYB103K16
C55	CAPACITOR	CKSSYB103K16
C65	CAPACITOR	CKSSYB103K16
C66	CAPACITOR	CKSSYB102K50
C68	CAPACITOR	CKSSYB103K16
C7	CAPACITOR	CKSSYB103K16
C70	CAPACITOR	CKSSYB103K16
C71	ELECT. CAPACITOR	CEAL100M16
C72	CAPACITOR	CKSSYB103K16
C146	CAPACITOR	CKSSYB103K16
C75	CAPACITOR	CKSSYB103K16
C76	CAPACITOR	CKSSYB471K50
C77	CAPACITOR	CKSSYB103K16
C79	ELECT. CAPACITOR	CEAL100M16
C81	CAPACITOR	CKSSYB103K16
C87	CAPACITOR	CKSSYB103K16
C90	CAPACITOR	CKSSYB102K50
C82	ELECT. CAPACITOR	CEAL100M16
C80	CAPACITOR	CKSSYB103K16
C85	CAPACITOR	CKSSYB471K50
C86	ELECT. CAPACITOR	CEAL100M16
C88	ELECT. CAPACITOR	CEAL100M16
C92	ELECT. CAPACITOR	CEAL4R7M16
C91	CAPACITOR	CKSSYB102K50
C60	CAPACITOR	CKSSYB102K50
C97	ELECT. CAPACITOR	CEAL100M16
C94	ELECT. CAPACITOR	CEJQ221M16

Mark No.	Description	Part No.
RESISTORS		
R120	RESISTOR	RS1/16S4701F
R121	RESISTOR	RS1/16S4701F
R2	RESISTOR	RS1/16S1002F
R64	RESISTOR	RS1/16S1002F
R65	RESISTOR	RS1/16S1002F
R66	RESISTOR	RS1/16S1002F
R67	RESISTOR	RS1/16S1002F
R68	RESISTOR	RS1/16S1002F
R69	RESISTOR	RS1/16S1002F
R70	RESISTOR	RS1/16S1002F
R90	RESISTOR	RD1/4PUF5R6J
Other Resistors		RS1/16S###J
OTHERS		
X2	X'TAL OSC.(12.288MHz)	A49US-12288-F1-14D
X3	X'TAL OSC.(24.576MHz)	R49SDA-024576-F1-25D
ANT3	ANTENNA	ANT0100-0016
CN3	12P SOCKET	52418-1210
CN6	9P FFC CONNECTOR	VKN1213

*The AXX7198 on TX MODULE/RX MODULE is a service part containing two EEPROMs,both of which must be replaced when either needs to be replaced.

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DIAGNOSIS NOTE

They are notes at the time of XW-HT1 diagnosis.

• If a radio module(TX Module) is removed, a problem is in connection of GND.
(GNDA and GNDRF are separated.)
When you remove and examine a radio module, please be sure to connect GNDA and GNDRF.
(Just to short-circuit the standby cell of R1892.)

• EEPROM

PDL 019A8 of IC1303 writes a program in general-purpose EEPROM. Therefore, marking of IC is the maker part number (M24C64-RMN6) of EEPROM.
A white dot mark sticks. (The PDL number is not printed on IC.)

• The thing for XW-HT1 should be used for an adapter. By the adapter of an old wireless model Capacity is insufficient and an adapter breaks.
Moreover, in XW-HT1, the protection circuit when there is input voltage more than regulation is carried. In input about 14v or more, a protection circuit (IC1511) operates and the CTL terminal of IC1501 is controlled.
A power supply is not supplied after IC1501.

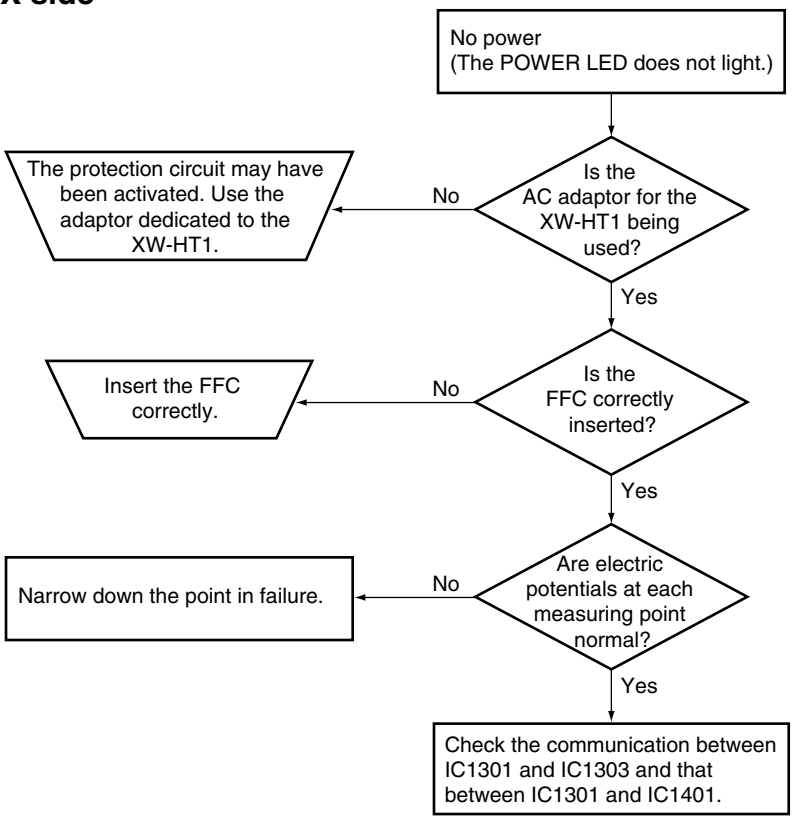
• Be careful of DSP ASSY not to burn oneself, since IC1501 generates heat at the time of examination. (Heat is usually radiated using a chassis.) If possible, please let me radiate heat.
Be careful for there to be no failure of a heat dissipation sheet to attach at the time of a service end.

• Receiver side AMP is BTL amplifier. SP output - side is appearance to which it does not short-circuit as GND (chassis etc.) at the time of diagnosis since it is not GND. Be careful.

7.1.2 TROUBLESHOOTING

(1) In a case where the power is not turned on (the POWER LED does not light)

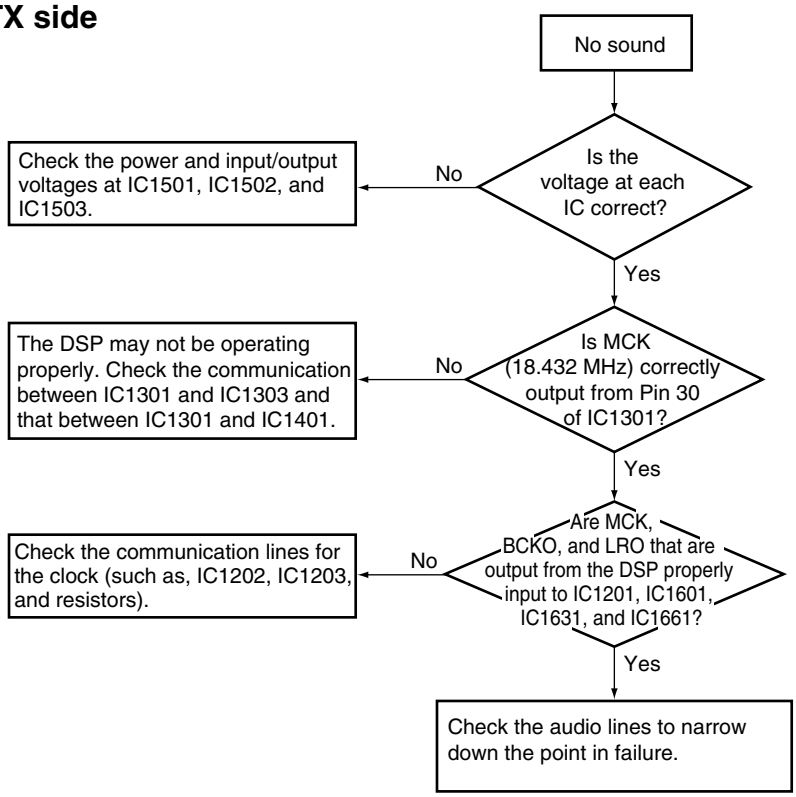
TX side


No power
(The POWER LED does not light.)
Is the AC adaptor for the XW-HT1 being used?
No
The protection circuit may have been activated. Use the adaptor dedicated to the XW-HT1.
Yes
Is the FFC correctly inserted?
No
Insert the FFC correctly.
Yes
Are electric potentials at each measuring point normal?
No
Narrow down the point in failure.
Yes
Check the communication between IC1301 and IC1303 and that between IC1301 and IC1401.

- Communication between IC1301 and IC1303 is initiated only immediately after the power is turned on.
- Communication between IC1301 and IC1401 is initiated immediately after the power is turned on and when modes are changed.

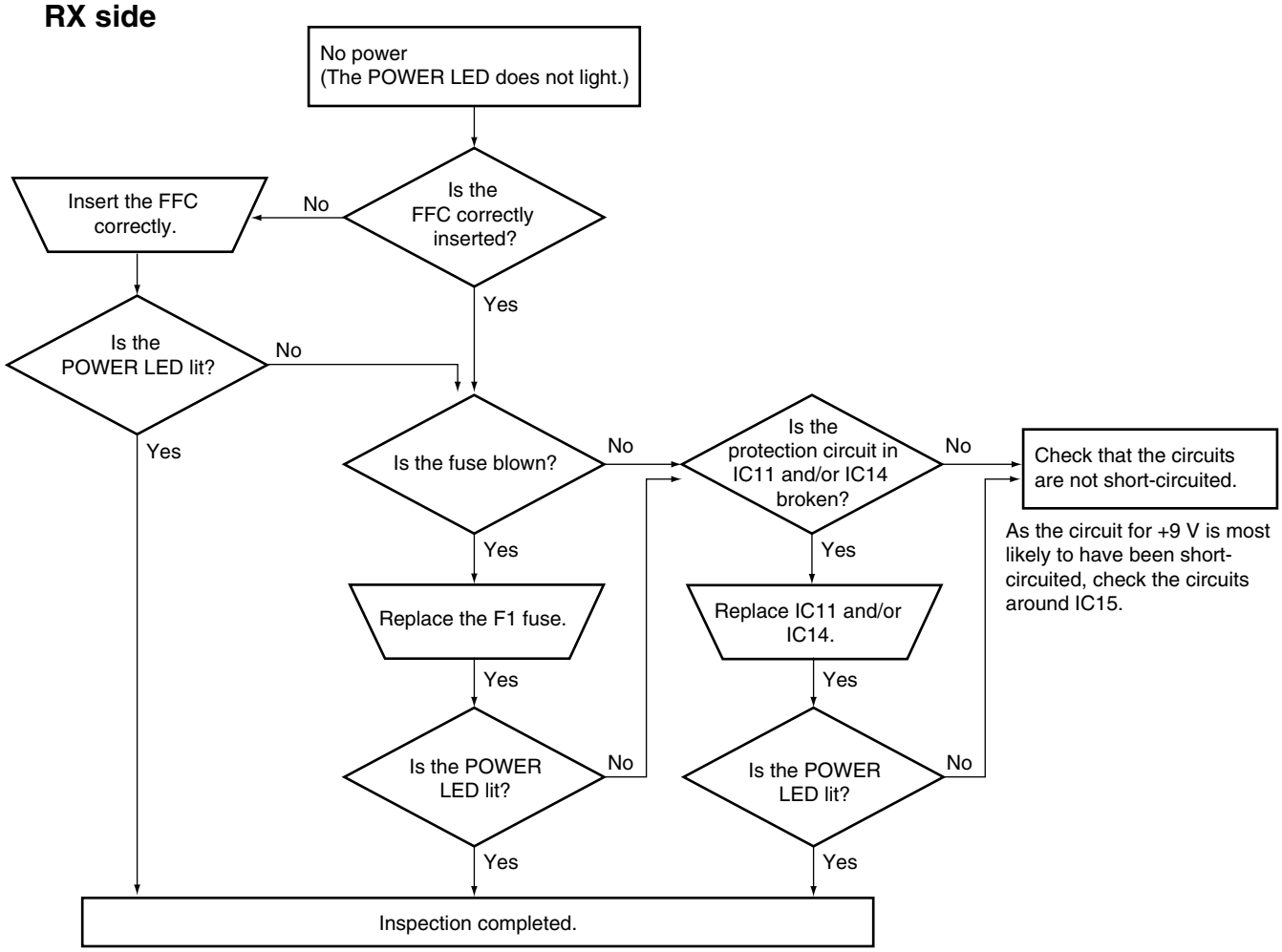
(2) In a case where no sound is output

TX side


No sound
Is the voltage at each IC correct?
No
Check the power and input/output voltages at IC1501, IC1502, and IC1503.
Yes
Is MCK (18.432 MHz) correctly output from Pin 30 of IC1301?
No
The DSP may not be operating properly. Check the communication between IC1301 and IC1303 and that between IC1301 and IC1401.
Yes
Are MCK, BCKO, and LRO that are output from the DSP properly input to IC1201, IC1601, IC1631, and IC1661?
No
Check the communication lines for the clock (such as, IC1202, IC1203, and resistors).
Yes
Check the audio lines to narrow down the point in failure.

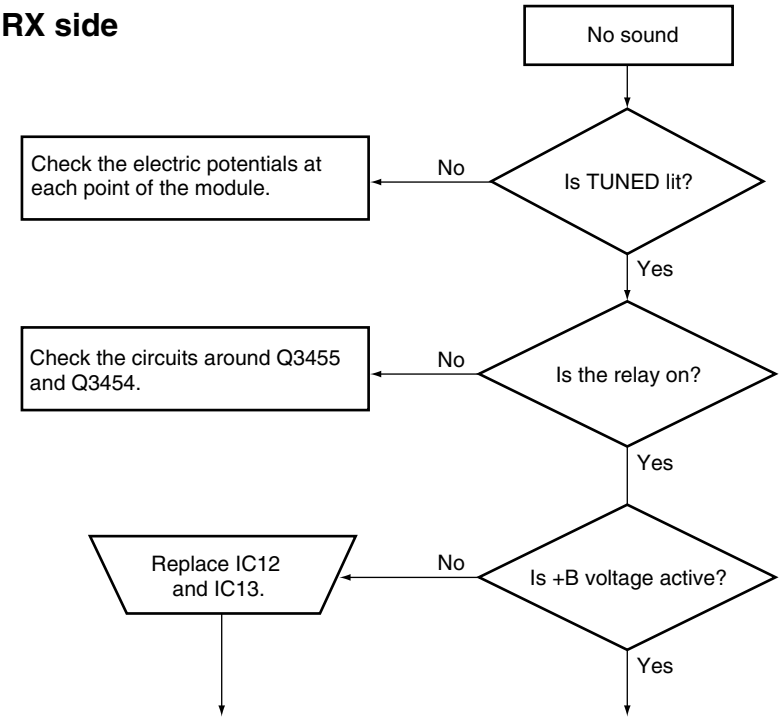
(1) In a case where the power is not turned on (the POWER LED does not light)

RX side



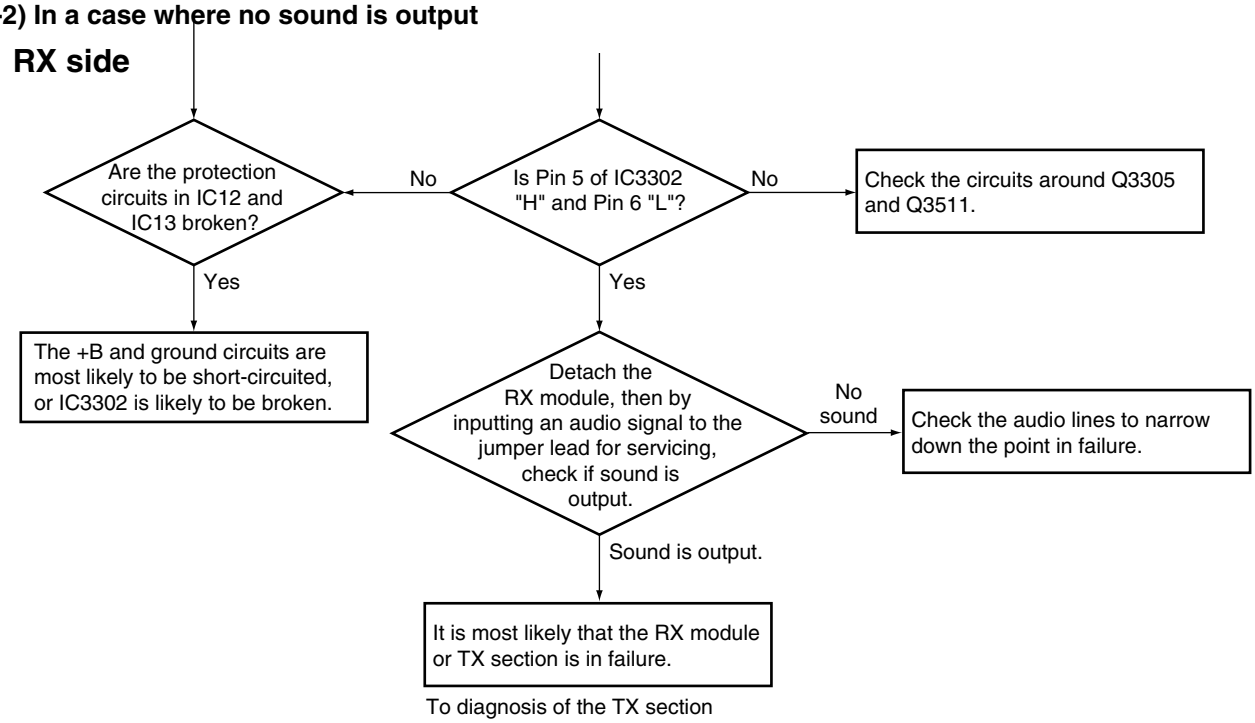
(2) In a case where no sound is output

RX side



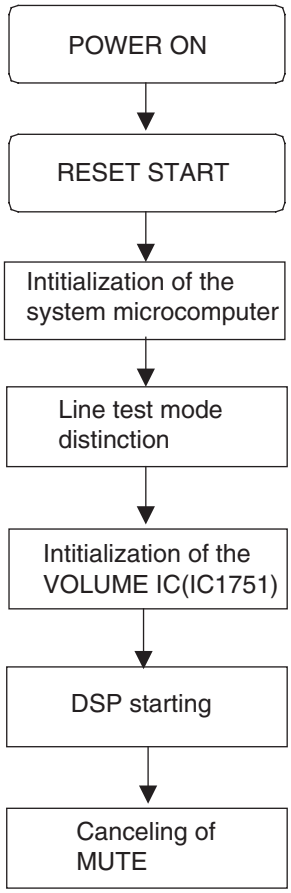
(2-2) In a case where no sound is output

RX side


Are the protection circuits in IC12 and IC13 broken?
No
Is Pin 5 of IC3302 "H" and Pin 6 "L"?
No
Check the circuits around Q3305 and Q3511.
Yes
Yes
The +B and ground circuits are most likely to be short-circuited, or IC3302 is likely to be broken.
Detach the RX module, then by inputting an audio signal to the jumper lead for servicing, check if sound is output.
No sound
Check the audio lines to narrow down the point in failure.
Sound is output.
It is most likely that the RX module or TX section is in failure.

To diagnosis of the TX section

7.1.3 POWER ON SEQUENCE



• A pin number is a terminal number of the system microcomputer PDC 118.

XRESET (Pin 2) terminal is set to Hi.

TEST (Pin 4) terminal is Lo, it will become line test mode.

It is a communication start because of initialization of VOLUME IC. (43,44,45pin)

SRESET (Pin13) terminal is set to Hi.

DSP IC and a communication start. (9,10,11,12pin)

In the power ON, it is each MUTE release after about 5 seconds.

XSYSMUTE (38pin) terminal is Hi.

XWMUTE (42pin) terminal is Hi.

XSWMUTE (37pin) terminal is Hi.

However, when volume is "0", it does not cancel MUTE.

7.1.4 NOTES ON REPLACE OF PARTS

(ID-related)

The ID number for an individual product is stored in the EEPROMs (IC7 for the TX module, IC11 for the RX module) of each module (TX module: AXF7010, RX module: AXF7011). It should be noted that wireless communications cannot be performed unless these ID numbers are identical.

1. Replacement of the TX or RX module

Upon replacement of the TX (AXF7010) or RX (AXF7011) module, remove the EEPROM from the original module and mount it on the new one.

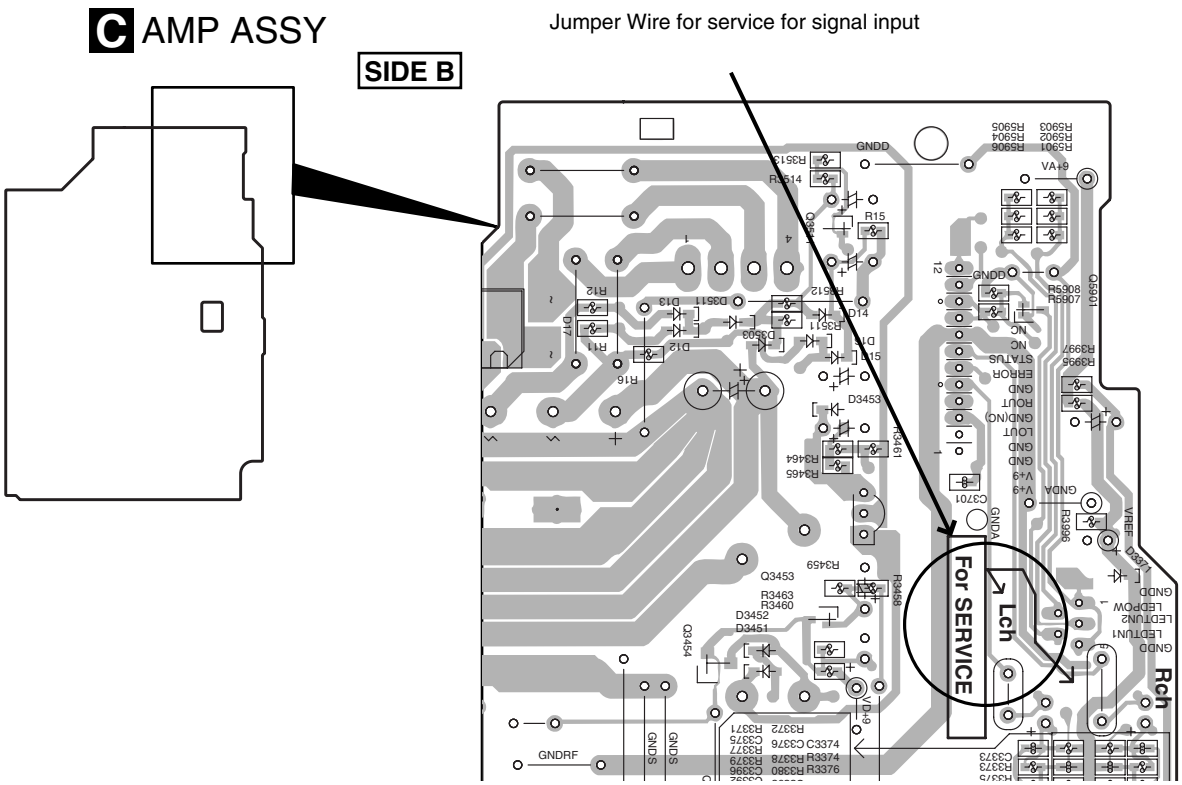
2. Replacement of the EEPROMs (IC7 and IC11)

Using service part AXX7198 (a kit containing two EEPROMs with identical ID numbers stored in them,) replace both EEPROMs when either needs to be replaced.

Note : The AXX7198 is a service part containing two EEPROMs, both of which must be replaced when either needs to be replaced.

7.1.5 DIAGNOSIS OF THE AMPLIFIER SECTION

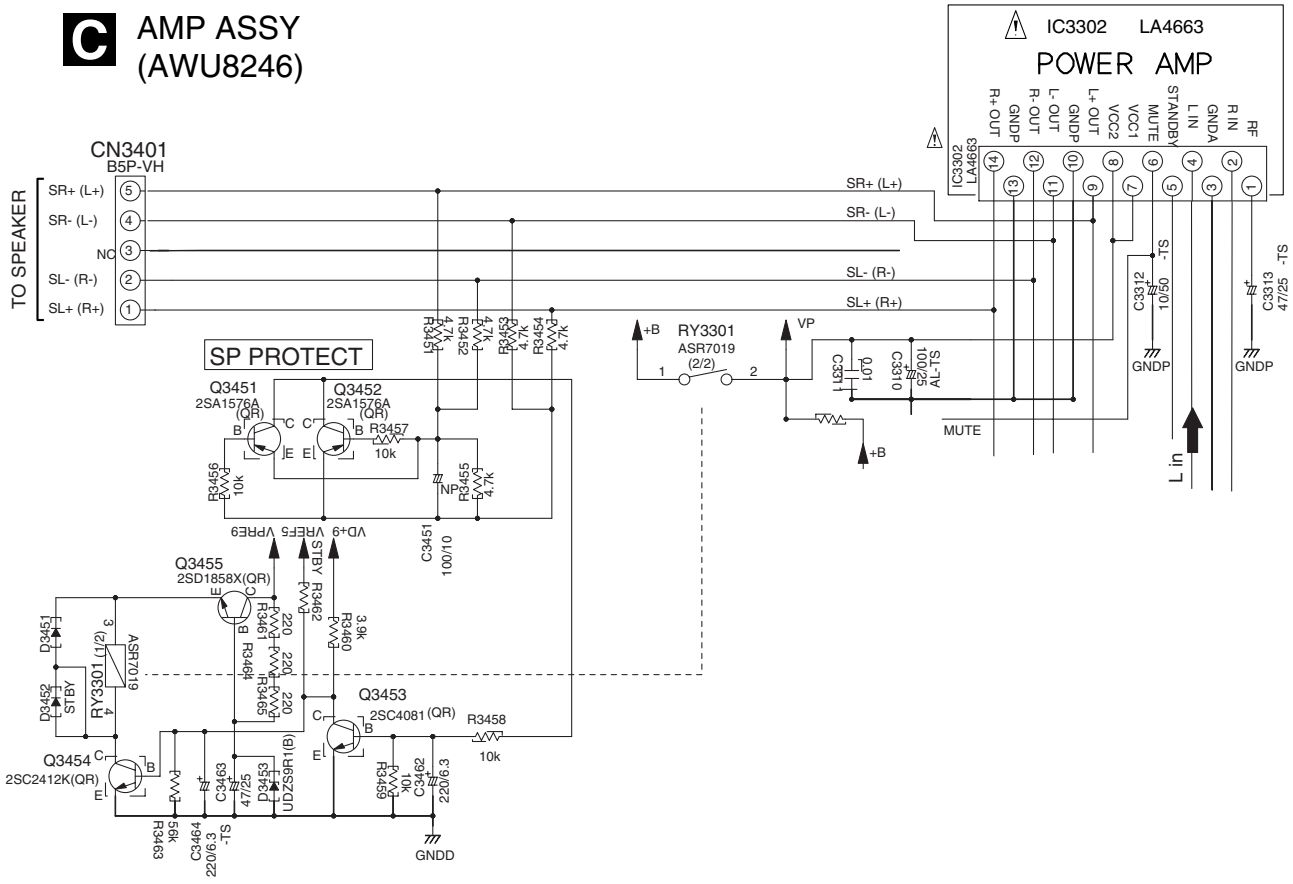
You can diagnose the amplifier section even if the transmitter section is not available. Input audio signals to the Jumper Wire for service use indicated below. At that time remove the RX MODULE.



7.1.6 PROTECTION CIRCUIT

■ PROTECT Operation Description

C AMP ASSY
(AWU8246)



DC detection circuit

SP PROTECT is set to "H"
Q3453 turns on, next Q3454 turns off.

In connection with it, the power supply (+VP) to IC3302 POWER IC is lost in RY3301 relay turning off.

Therefore, an unusual state (DC output state) is canceled.

In addition, if an unusual state is canceled, since RY3301 relay turns on, DC detection of it will be carried out again, SP PROTECT will be set to "H", and RY3301 will repeat ON/OFF.

Cautions: Since RY3301 relay repeats ON/OFF, a check on a feeling of hearing can be taken at the time of abnormalities.

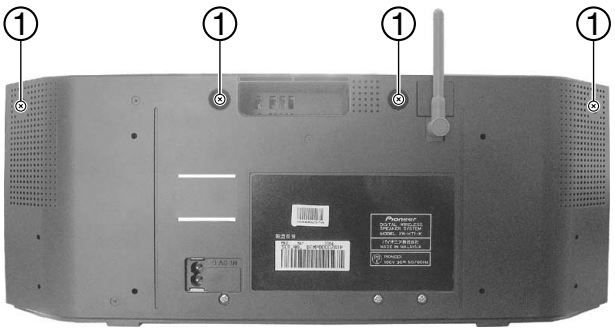
Since a relay repeats ON/OFF, be careful of +VP voltage at the time of diagnosis.

7.1.7 DISASSEMBLY

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

1 Grille Assy

① Remove the four screws.

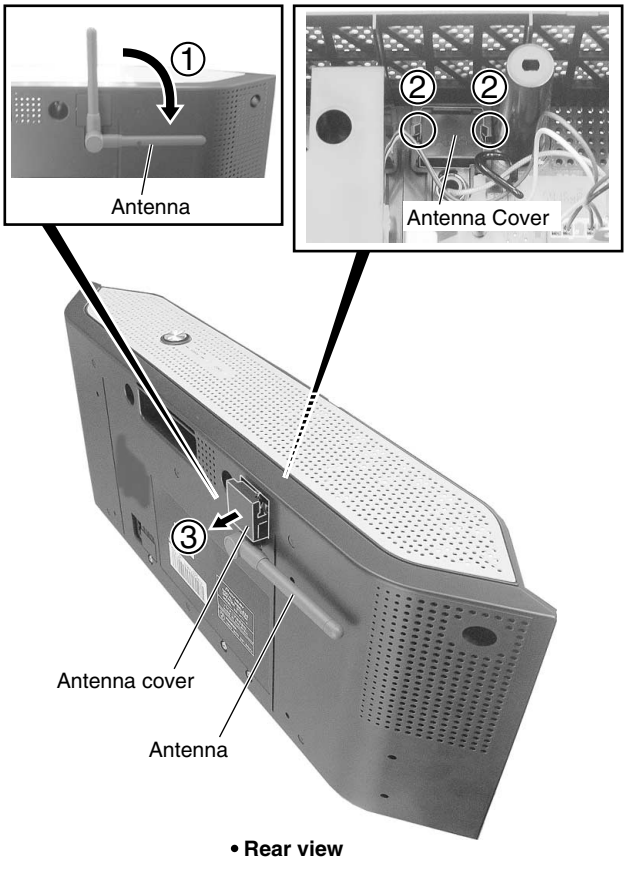


• **Rear view**

② Remove the Grille Assy.

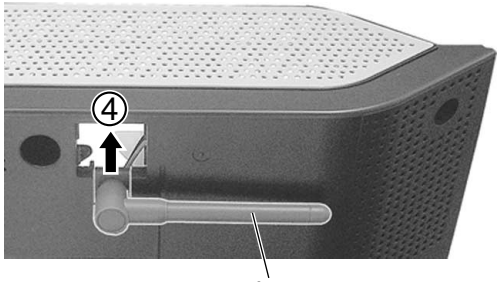
2 Antenna

① Turn a direction of the antenna.
② Unhook the two hooks of the antenna cover.
③ Remove the antenna cover.



• **Rear view**

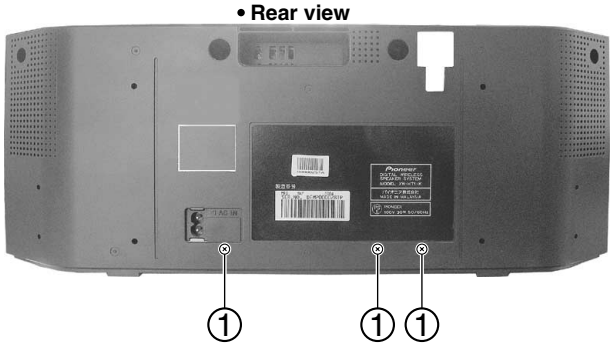
④ Pull the antenna to upper side, and remove it.
Put the antenna which removed in a inside of the product.



3 Chassis Section

① Remove the three screws.

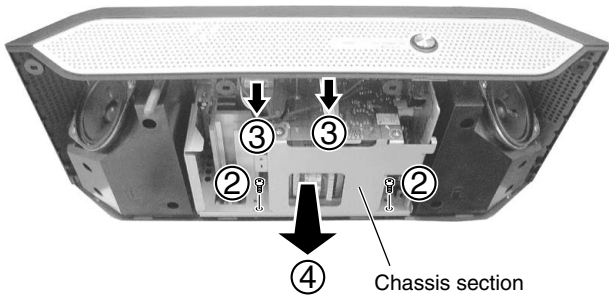
• Rear view

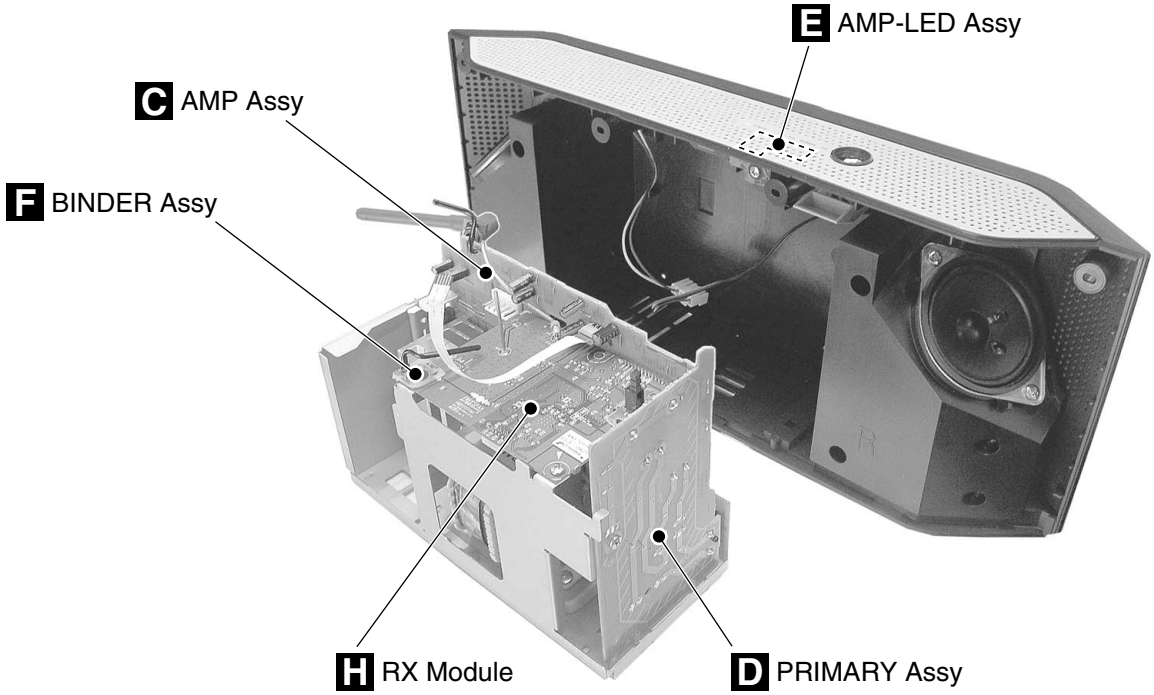


② Remove the two screws.

③ Disconnect the one connector and the one flexible cable.

④ Pull out the chassis section.

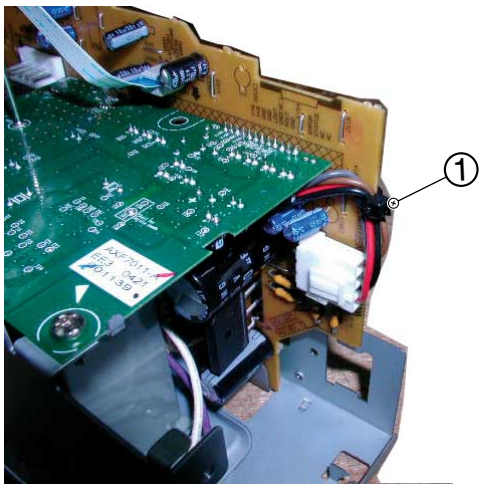




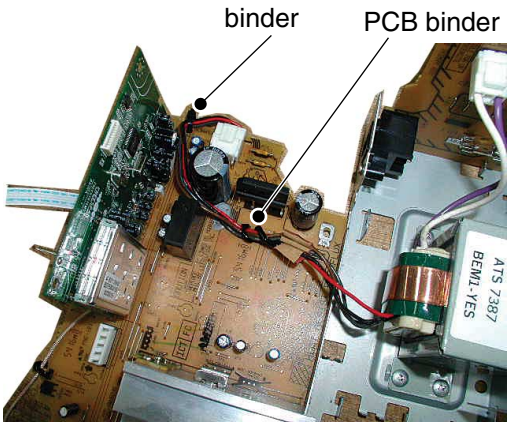
7.1.8 The style of a wire rod

Wire rod

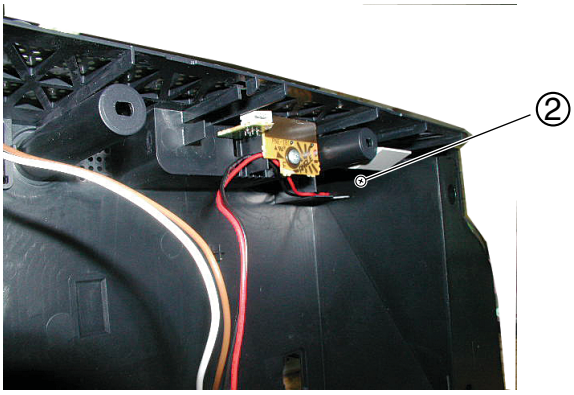
① Attachment of a binder • **Rear view**



④ Power supply section style of a wire rod

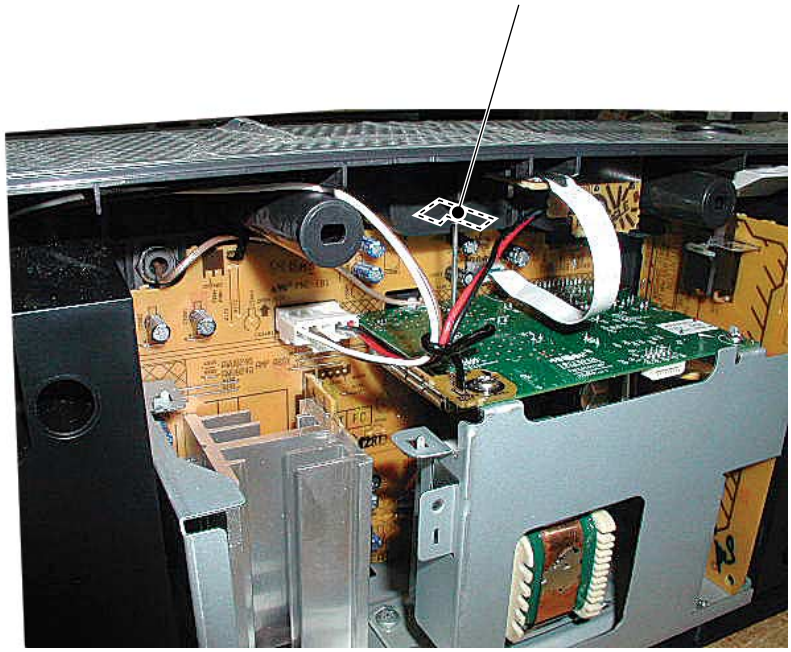


② Speaker section style of a wire rod



③ The style of a wire rod

A wire rod cannot be touched at an antenna.



7.2 IC

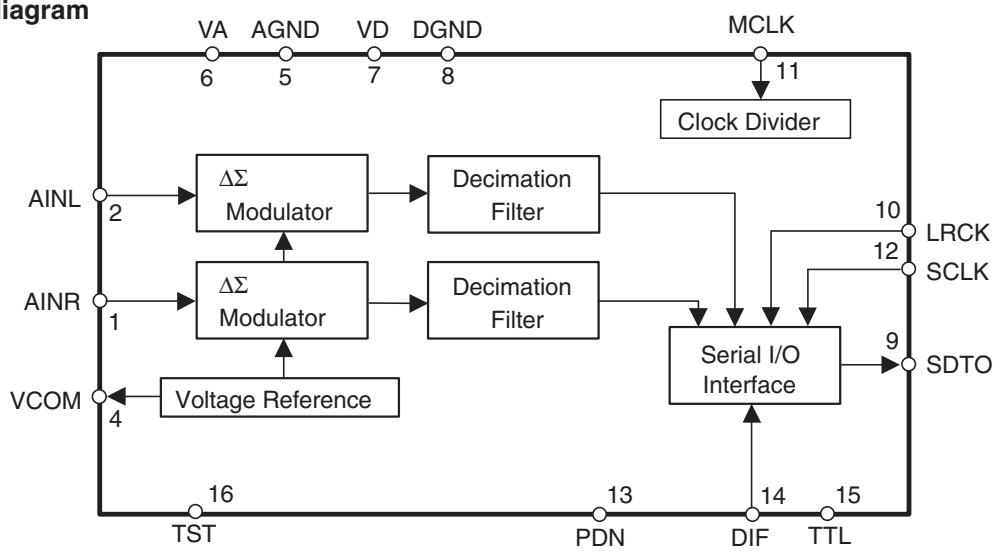
• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

● **IC List** AK5380VT, PCM1742KE, FS2105TX, FS2105RX, NJU26150, LA4463, PDC118A

■ AK5380VT (TX Module : IC9)

• AD Converter

● **Blockdiagram**



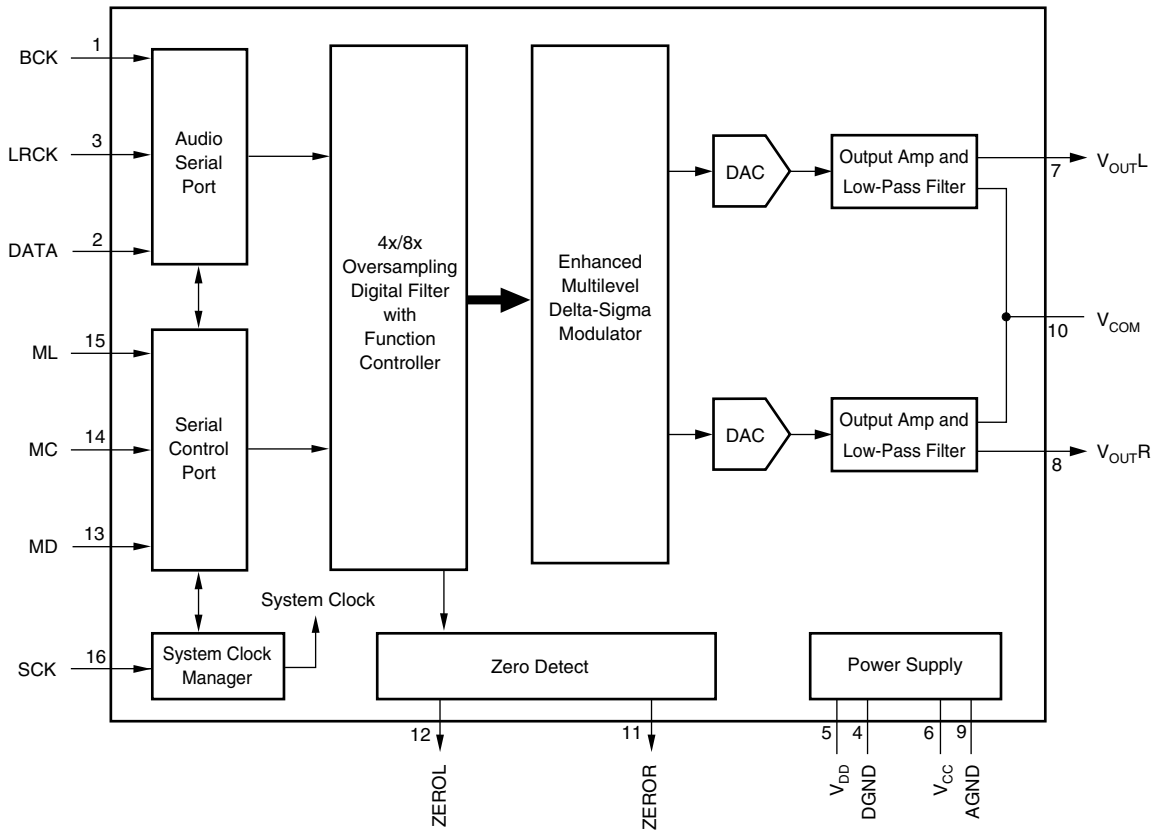
● **Pin function**

No.	Pin Name	I/O	Pin Function
1	AINR	I	Rch analog input pin
2	AINL	I	Lch analog input pin
3	NC	–	NC pin (No internal bonding)
4	VCOM	O	Common voltage output pin
5	AGND	–	Analog ground pin
6	VA	–	Analog power supply pin, +4.5– +5.5V
7	VD	–	Digital power supply pin, +2.7– +5.5V (fs=48kHz), +4.5– +5.5V (fs=96kHz)
8	DGND	–	Digital ground pin
9	SDTO	O	Serial data output pin
10	LRCK	I	L/R channel clock pin (Input fs clock)
11	MCLK	I	Master clock input pin
12	SCLK	I	Serial data clock input pin
13	PDN	I	Power down pin ["L ": power down mode] Be sure to reset once when power on.
14	DIF	I	Serial interface format pin ["L" : cut short forward, "H ": IIS]
15	TTL	I	Selection pin for digital input level ["L" : CMOS level (VD=2.7– 5.5V), "H" : TTL level (VD=4.5– 5.5V)]
16	TST	I	Test pin (internal pull down)

PCM1742KE (RX Module : IC28)

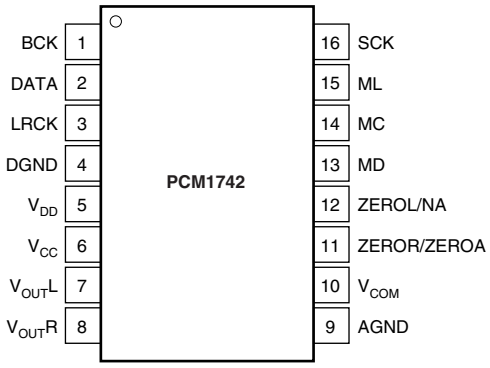
• DA Converter

● Blockdiagram



● Pin layout

TOP VIEW



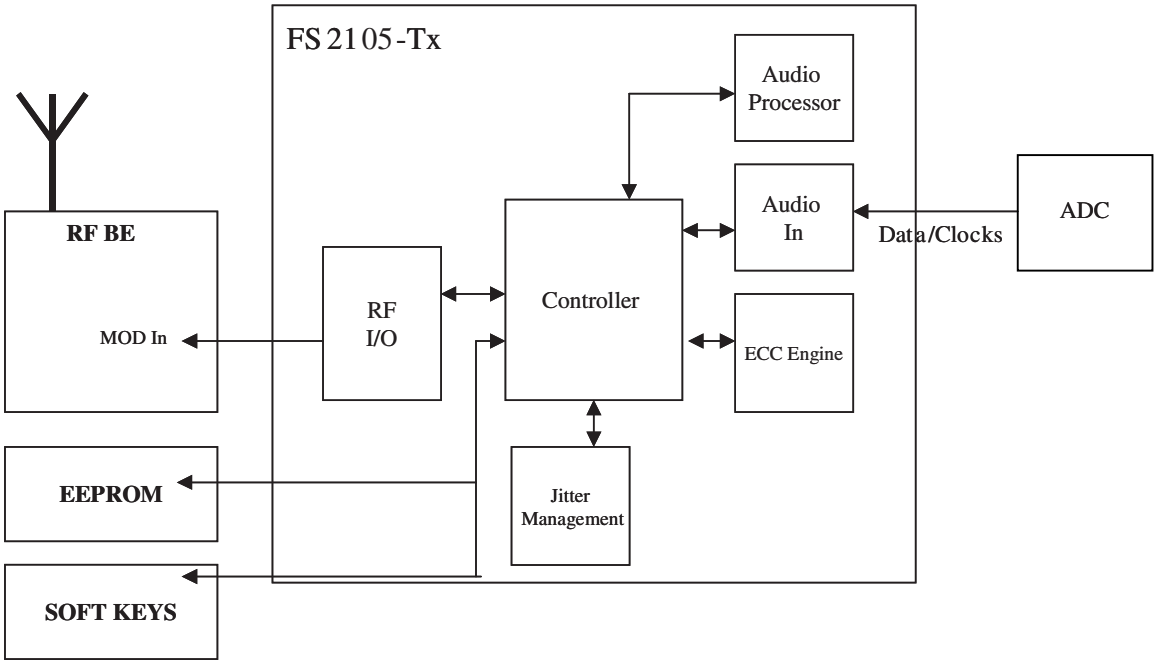
● Pin function

No.	Pin Name	I/O	Pin Function
1	BCK	I	Bit clock input for audio data (Schmidt trigger input)
2	DATA	I	Digital input for audio data (Schmidt trigger input)
3	LRCK	I	Latch enable input for L/R channel of audio data
4	DGND	–	Digital ground
5	VDD	–	Digital power supply, +3.3V
6	VCC	–	Analog power supply, +5V
7	VOUTL	O	Analog output for L ch
8	VOUTR	O	Analog output for Rch
9	AGND	–	Analog ground
10	VCOM	–	Decoupling for same phase voltage
11	ZEROR/ZEROA	O	Zero flag output for Rch / zero flag output for L/R ch
12	ZEROL/NA	O	Zero flag output for Lch / Not used
13	MD	I	Data input for mode control
14	MC	I	Clock input for mode control
15	ML	I	Latch input for mode control
16	SCK	I	System clock input

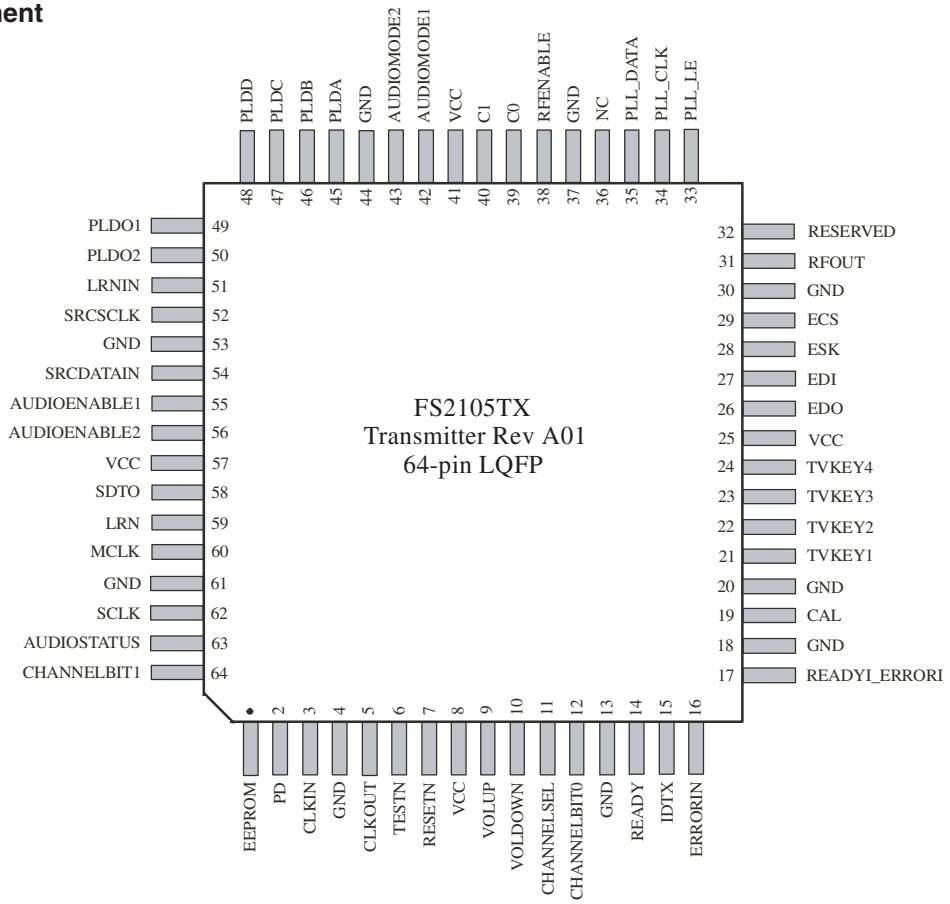
FS2105TX (TX Module : IC1)

• DSP for Transmitter

● Blockdiagram



● Pin Assignment



● **Pin Function (1/2)**

Pin No	Name	Functional Grouping	IO Type	Description
1	EEPROM	System	Input	Indicate the usage of a external serial EEPROM, 1 => serial EEPROM is present 0 => serial EEPROM is absent, use system default settings upon power up
2	PD	Power Management	Input	Power Down pin
3	CLKIN	System	Input	24.576MHz crystal pad input
4	GND	Ground	NA	Ground
5	CLKOUT	System	Output	24.576MHz crystal pad output
6	TESTN	TEST	Input	Test Mode Select
7	RESETN	System	Input	Master reset ñ Active Low
8	VCC	Power	NA	3.3 V
9	VOLUP	System	Input	Push button Digital Volume Up pin
10	VOLDOWN	System	Input	Push button Digital Volume Down pin
11	CHANNELSEL	System	Input	Push button Channel Select pin
12	CHANNELBIT0	System	Output	Channel Number Bit 0
13	GND	Ground	NA	Ground
14	READY	System	Output	Chip ready status signal (active high) ñ Open Drain
15	IDTX	System	Input	ID Broadcast mode
16	ERRORIN	System	Input	Audio Error signal ñ Active High (default)
17	READYI/ERRORI	System	Output	Configurable READYN or ERRORN signal
18	GND	Ground	NA	Ground
19	CAL	ADC	Output	ADC Calibration Signal
20	GND	Ground	NA	Ground
21	TVKEY1	Forward Link	Input	Input Forward Virtual Key 1
22	TVKEY2	Forward Link	Input	Input Forward Virtual Key 2
23	TVKEY3	Forward Link	Input	Input Forward Virtual Key 3
24	TVKEY4	Forward Link	Input	Input Forward Virtual Key 4
25	VCC	Power	NA	3.3 V
26	EDO	Serial EEPROM	Input	Serial Data Output from Serial EEPROM
27	EDI	Serial EEPROM	Output	Serial Data Input to Serial EEPROM
28	ESK	Serial EEPROM	Output	Serial Clock Input to Serial EEPROM
29	ECS	Serial EEPROM	Output	Chip Select to Serial EEPROM (active low)
30	GND	Ground	NA	Ground

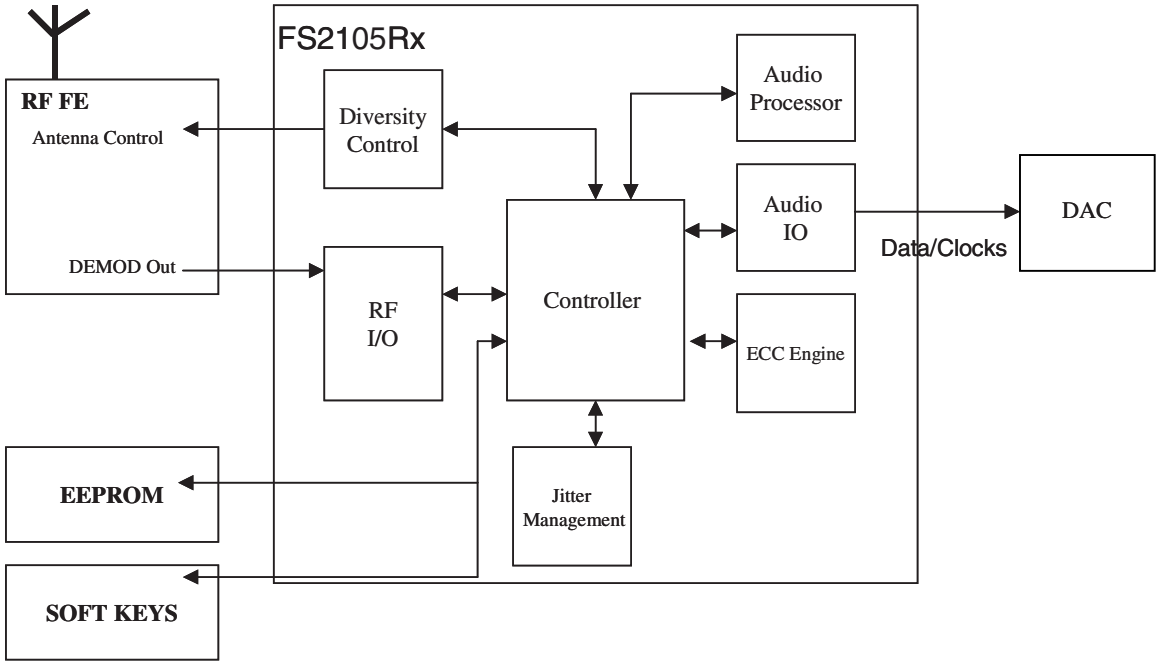
● **Pin Function (2/2)**

31	RFOUT	Front-End	Output	RF Digital Output to RF Front End Module
32	RESERVED	System	Input	Must be tied to VCC
33	PLL_LE	Front-End	Output	RF Module PLL Latch Enable
34	PLL_CLK	Front-End	Output	RF Module PLL Clock
35	PLL_DATA	Front-End	Output	RF Module PLL Data
36	NC	System	Output	Not used. Left it floating
37	GND	Ground	NA	Ground
38	RFENABLE	Power Management	Output	RF Power Enable, 0 => Turn off RF module power Tri-state => Turn on RF module power Open Drain Output
39	C0	Front-End	Input	Manual Channel Select Bit 0
40	C1	Front-End	Input	Manual Channel Select Bit 1
41	VCC	Power	NA	3.3 V
42	AUDIOMODE1	System	Input	Audio Mode 1
43	AUDIOMODE2	System	Input	Audio Mode 2
44	GND	Ground	NA	Ground
45	PLDA	Programmable Logic	Input	Programmable Input Logic A
46	PLDB	Programmable Logic	Input	Programmable Input Logic B
47	PLDC	Programmable Logic	Input	Programmable Input Logic C
48	PLDD	Programmable Logic	Input	Programmable Input Logic D
49	PLDO1	Programmable Logic	Output	Programmable Output Logic 1, PLDO1 = f(A,B)
50	PLDO2	Programmable Logic	Output	Programmable Output Logic 2, PLDO1 = f(C,D)
51	LRNIN	SRC	Input	SRC LRN Input
52	SRCSCLK	SRC	Input/Output	SRC SCLKOUT or SRC SCLKIN signal
53	GND	Ground	NA	Ground
54	SRCDATAIN	SRC	Input	SRC DATAOUT to FS2105TX
55	AUDIOENABLE1	Power Management	Output	Audio Circuit Power Enable 1, 0 => Turn off Audio Circuit 1 power Tri-state => Turn on Audio Circuit 1 power Open Drain Output
56	AUDIOENABLE2	Power Management	Output	Audio Circuit Power Enable 2, 0 => Turn off Audio Circuit 2 power Tri-state => Turn on Audio Circuit 2 power Open Drain Output
57	VCC	Power	NA	3.3 V
58	SDTO	ADC	Input	ADC-SDTO (ADC Data input)
59	LRN	ADC	Output	ADC-LRN, ASRC-LRN (48K)
60	MCLK	ADC	Output	ADC-MCLK (12.288 MHz)
61	GND	Ground	NA	Ground
62	SCLK	ADC	Output	ADC-SCLK (3.072 MHz)
63	AUDIOSTATUS	System	Output	Audio Status Indicate, 0 => Low level audio or no audio Tri-State => Audio present Open Drain Output
64	CHANNELBIT1	System	Output	Channel Number Bit 1

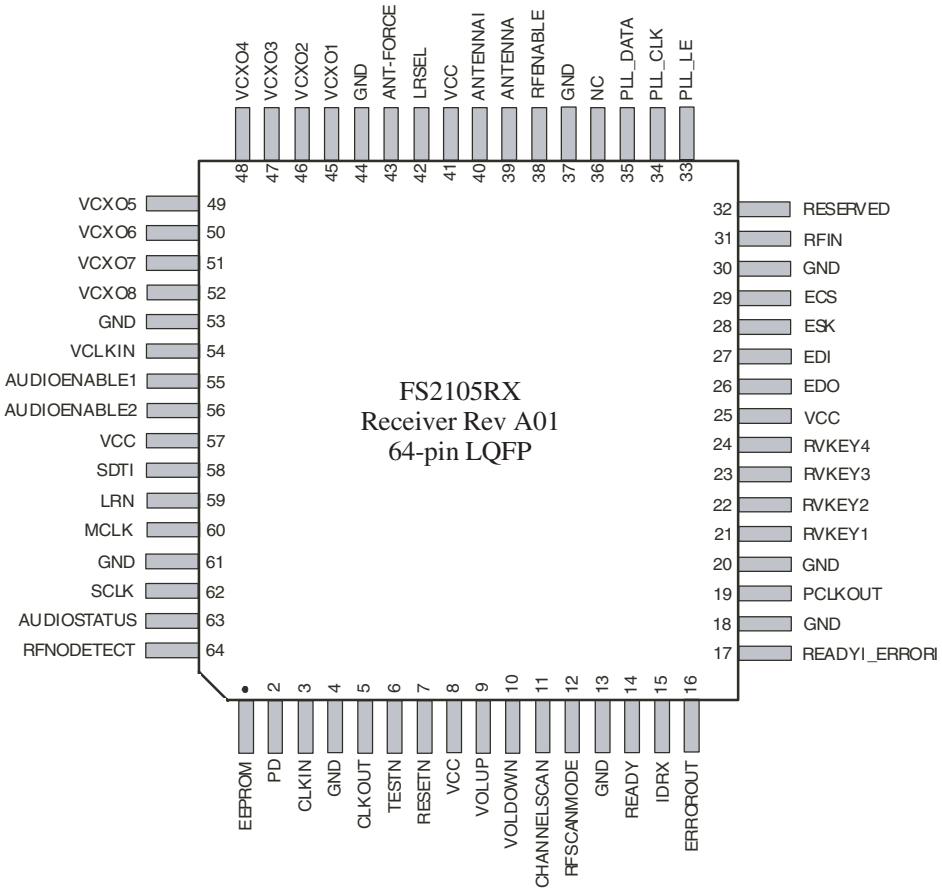
FS2105RX (RX Module : IC2)

• DSP for Receiver

● Blockdiagram



● Pin Assignment



● **Pin Function (1/2)**

Pin No	Name	Functional Grouping	IO Type	Description
1	EEPROM	System	Input	Indicate the usage of a external serial EEPROM, 1 => serial EEPROM is present 0 => serial EEPROM is absent, use system default settings upon power up
2	PD	Power Management	Input	Power Down pin
3	CLKIN	System	Input	24.576MHz crystal pad input
4	GND	Ground	NA	Ground
5	CLKOUT	System	Output	24.576MHz crystal pad output
6	TESTN	TEST	Input	Test Mode Select
7	RESETN	System	Input	Master reset ñ Active Low
8	VCC	Power	NA	3.3 V
9	VOLUP	System	Input	Push button Digital Volume Up pin
10	VOLDOWN	System	Input	Push button Digital Volume Down pin
11	CHANNELSCAN	System	Input	Push button Channel AutoScan pin
12	RFSCANMODE	System	Output	RF Scan Mode Status Output
13	GND	Ground	NA	Ground
14	READY	System	Output	Chip ready status signal (active high) ñ Open Drain
15	IDRX	System	Input	Push button ID Receive mode
16	ERROROUT	System	Output	System Error signal Output
17	READYI/ERRORI	System	Output	Configurable READYN or ERRORN signal
18	GND	Ground	NA	Ground
19	PCLKOUT	System	Output	Programmable Clock Output
20	GND	Ground	NA	Ground
21	RVKEY1	Forward Link	Output	Received Forward Virtual Key 1
22	RVKEY2	Forward Link	Output	Received Forward Virtual Key 2
23	RVKEY3	Forward Link	Output	Received Forward Virtual Key 3
24	RVKEY4	Forward Link	Output	Received Forward Virtual Key 4
25	VCC	Power	NA	3.3 V
26	EDO	Serial EEPROM	Input	Serial Data Output from Serial EEPROM
27	EDI	Serial EEPROM	Output	Serial Data Input to Serial EEPROM
28	ESK	Serial EEPROM	Output	Serial Clock Input to Serial EEPROM
29	ECS	Serial EEPROM	Output	Chip Select to Serial EEPROM (active low)
30	GND	Ground	NA	Ground
31	RFIN	Front-End	Input	RF Front End Digital Output
32	RESERVED	System	Input	Must be tied to GND
33	PLL_LE	Front-End	Output	RF Module PLL Latch Enable
34	PLL_CLK	Front-End	Output	RF Module PLL Clock
35	PLL_DATA	Front-End	Output	RF Module PLL Data

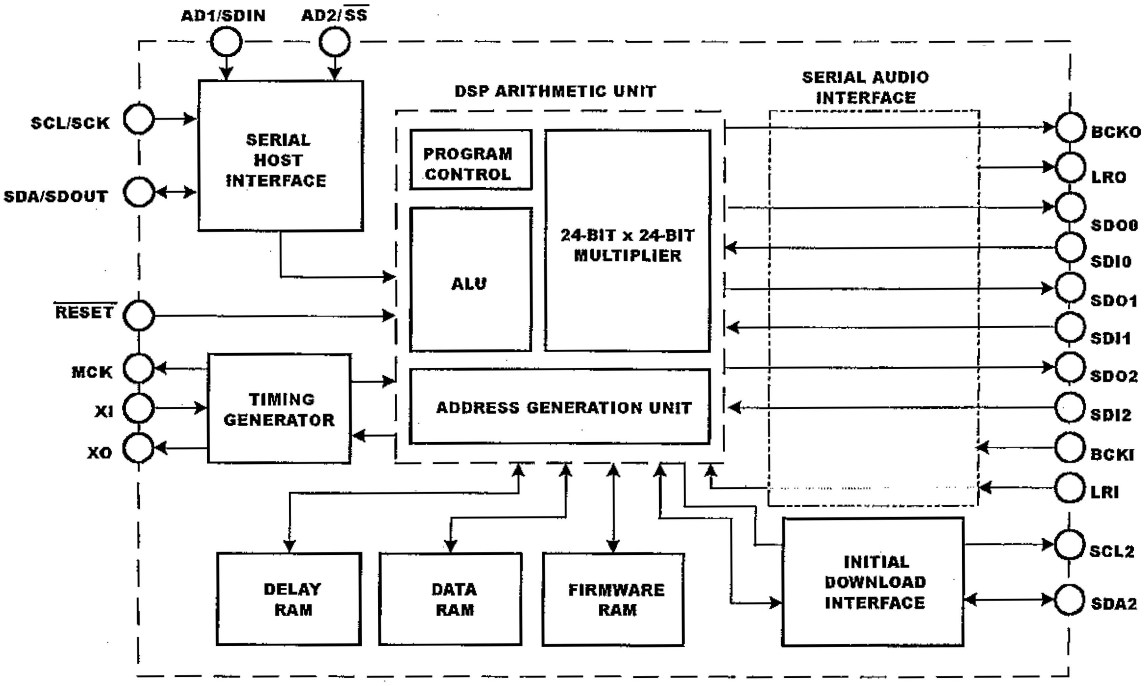
● **Pin Function (2/2)**

36	NC	System	Output	Not used. Left it floating
37	GND	Ground	NA	Ground
38	RFENABLE	Power Management	Output	RF Power Enable, 0 => Turn off RF module power Tri-state => Turn on RF module power Open Drain Output
39	ANTENNA	Front-End	Output	Antenna Switch Logic
40	ANTENNAI	Front-End	Output	Antenna Switch Logic Inverted
41	VCC	Power	NA	3.3 V
42	LRSEL	System	Input	Left Right Audio Channel Select
43	ANT-FORCE	System	Input	Antenna Force Control.
44	GND	Ground	NA	Ground
45	VCXO1	DAC	Output	VCXO Control Bit 1
46	VCXO2	DAC	Output	VCXO Control Bit 2
47	VCXO3	DAC	Output	VCXO Control Bit 3
48	VCXO4	DAC	Output	VCXO Control Bit 4
49	VCXO5	DAC	Output	VCXO Control Bit 5
50	VCXO6	DAC	Output	VCXO Control Bit 6
51	VCXO7	DAC	Output	VCXO Control Bit 7
52	VCXO8	DAC	Output	VCXO Control Bit 8
53	GND	Ground	NA	Ground
54	VCLKIN	DAC	Input	VCXO 12.288 MHz clock input
55	AUDIOENABLE1	Power Management	Output	Audio Circuit Power Enable 1, 0 => Turn off Audio Circuit 1 power Tri-state => Turn on Audio Circuit 1 power Open Drain Output
56	AUDIOENABLE2	Power Management	Output	Audio Circuit Power Enable 2, 0 => Turn off Audio Circuit 2 power Tri-state => Turn on Audio Circuit 2 power Open Drain Output
57	VCC	Power	NA	3.3 V
58	SDTI	DAC	Output	DAC-SDTI (I2S format)
59	LRN	DAC	Output	DAC-LRN (48K)
60	MCLK	DAC	Output	DAC-MCLK (12.288 MHz)
61	GND	Ground	NA	Ground
62	SCLK	DAC	Output	DAC-SCLK (3.072 MHz)
63	AUDIOSTATUS	System	Output	Audio Status Indicate, 0 => Low level audio or no audio Tri-State => Audio present Open Drain Output
64	RFNODETECT	System	Output	RF Status Indicate

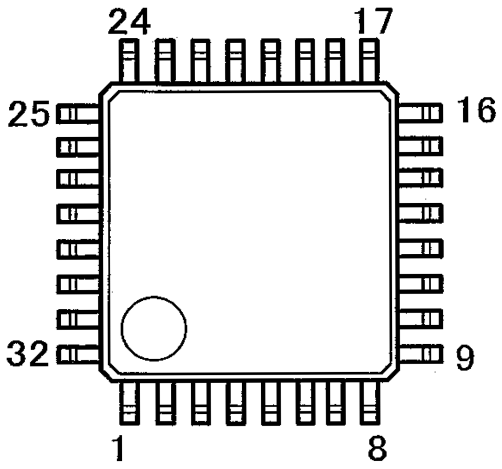
NJU26150 (DSP ASSY : IC1301)

• DSP IC

● Blockdiagram



● Pin Arrangement(Top view)



No.	SYMBOL	No.	SYMBOL	No.	SYMBOL	No.	SYMBOL
1	SDO2	9	VDDO	17	VDDC	25	SDI0
2	SDO1	10	XI	18	VDDC	26	SDI1
3	SDO0	11	XO	19	VSSC	27	SDI2
4	SDA2	12	VSSO	20	VSSC	28	LRI
5	SCL/SCK	13	$\overline{\text{RESET}}$	21	VDDR	29	BCKI
6	SDA/SDOUT	14	VDDC	22	VDDR	30	MCK
7	AD1/SDIN	15	VSSC	23	VSSR	31	BCKO
8	AD2/$\overline{\text{SS}}$	16	SCL2	24	VSSR	32	LRO

■ NJU26150 (DSP ASSY : IC1301)

• DSP IC

● Pin Function

No.	SYMBOL	I/O	DESCRIPTION	No.	SYMBOL	I/O	DESCRIPTION
1	SDO2	O	Audio Data Output ch.2	17	VDDC	P	DSP Core Power Supply +2.5V
2	SDO1	O	Audio Data Output ch.1	18	VDDC	P	DSP Core Power Supply +2.5V
3	SDO0	O	Audio Data Output ch.0	19	VSSC	G	DSP Core Power Supply GND
4	SDA2	I/O	I²C I/O / Serial Out (for Initial Download)	20	VSSC	G	DSP Core Power Supply GND
5	SCL/SCK	I	I²C clock / Serial clock	21	VDDR	P	I/O Power Supply +2.5V
6	SDA/SDOUT	I/O	I²C I/O / Serial Out	22	VDDR	P	I/O Power Supply +2.5V
7	AD1/SDIN	I	I²C Address / Serial In	23	VSSR	G	I/O Power Supply GND
8	AD2/$\overline{SS}$	I	I²C Address / Serial enable	24	VSSR	G	I/O Power Supply GND
9	VDDO	P	OSC Power Supply +2.5V	25	SDI0	I	Audio Data Input ch.0
10	XI	I	OSC Clock Input	26	SDI1	I	Audio Data Input ch.1
11	XO	O	OSC Clock Output	27	SDI2	I	Audio Data Input ch.2
12	VSSO	G	OSC Power Supply GND	28	LRI	I	LR Clock Input
13	$\overline{RESET}$	I	Reset	29	BCKI	I	Bit Clock Input
14	VDDC	P	DSP Core Power Supply +2.5V	30	MCK	O	A/D, D/A Clock Output
15	VSSC	G	DSP Core Power Supply GND	31	BCKO	O	Bit Clock Output
16	SCL2	O	I²C I/O / Serial Out (for Initial Download)	32	LRO	O	LR Clock Output

※I:In, O:Out, I/O:Bidir, P:Power, G:GND

■ PDC118A (DSP ASSY : IC1401)

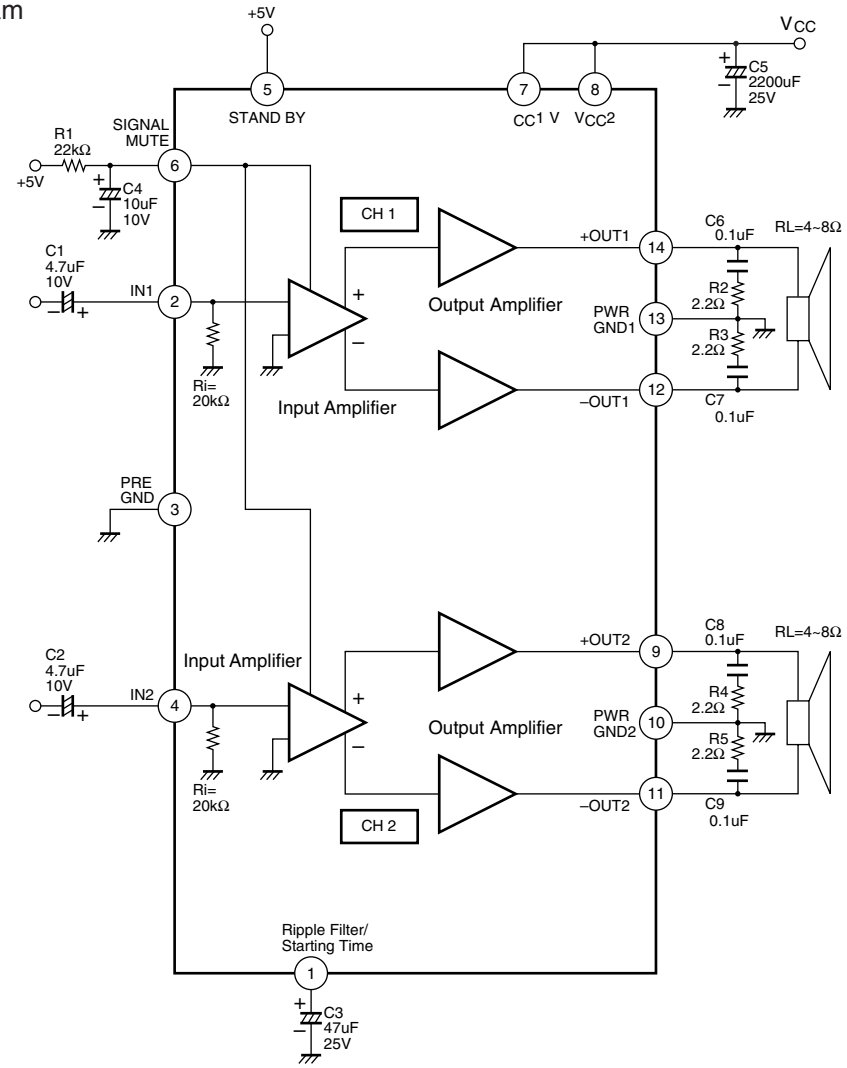
• System Control Microcomputer

No.	Pin Name	I/O	Function
1	REMOCON	I	REMOCON signal input(Interruption)
2	XRESET	I	μ-com reeset input
3	KEY1	I	Key1 input
4	TEST	I	UNIT TEST MODE / forces.
5	Vss1	–	
6	CF1	–	Main Clock
7	CF2	–	Main Clock
8	VDD1	–	
9	SDOUT	I	NJU26108 (S R S Decoder)
10	SD IN	O	NJU26109 (S R S Decoder) ※NchOD
11	SCK	O	NJU26108 (S R S Decoder) ※NchOD
12	SSX	O	NJU26110 (S R S Decoder) serial enable ※NchOD
13	SRESET	O	NJU26111 (S R S Decoder) reset ※NchOD
14	DACMUTE	O	DAC Out put Mute
15	CHIN1	I	CH Input Select 1
16	CHIN2	I	CH Input Select 2
17	PWM1	–	
18	PWM0	–	
19	VDD2	–	
20	Vss2	–	
21	VOLLED1	O	
22	VOLLED4	O	
23	VOLLED2	O	
24	VOLLED5	O	
25	VOLLED3	O	
26	ATT	O	Control ATT for AUDIO IN
27	CS2CLED	O	CS2 CINEMA
28	WOFFLED	O	WIARELESS OFF
29	CS2MLED	O	CS2 MUSIC
30	FLASHE/D	-	for FLASH writing
31	FLASHDO	-	for FLASH writing
32	FLASHCLK	-	for FLASH writing
33	TVCLED	O	TV SURR1
34	TVMLED	O	TV SURR2
35	CS2STLED	O	CS2 W.STEREO
36	TVSTLED	O	TV/LINE W.STEREO
37	XSWMUTE	O	SUB WOFFER MUTE
38	XSYSMUTE	O	Control mute of system (FRONT MUTE)
39	VDD3	–	
40	VSS3	–	
41	A / D PDOWN	O	A/D POWER DOWN Power OFF : Lo/PowerON/Hi
42	XWMUTE	O	WIRE LESS MUTE request
43	WVOL DAT	O	WIRELESS SP E-VOL CLK (LC75342M) DBGP2(CLK)
44	WVOL CLK	O	WIRELESS SP E-VOL DATA (LC75342M) DBGP1(DAT)
45	WVOL CE	O	WIRELESS SP E-VOL CE (LC75342M) DBGP0(POC#)
46	IN PUT SEL A	O	INPUT SELECT A (Input Select) (BU4052)
47	IN PUT SEL B	O	INPUT SELECT B (Input Select) (BU4052)
48	STAN BY	O	

LA4663 (AMP ASSY : IC3302)

• POWER IC

● Blockdiagram



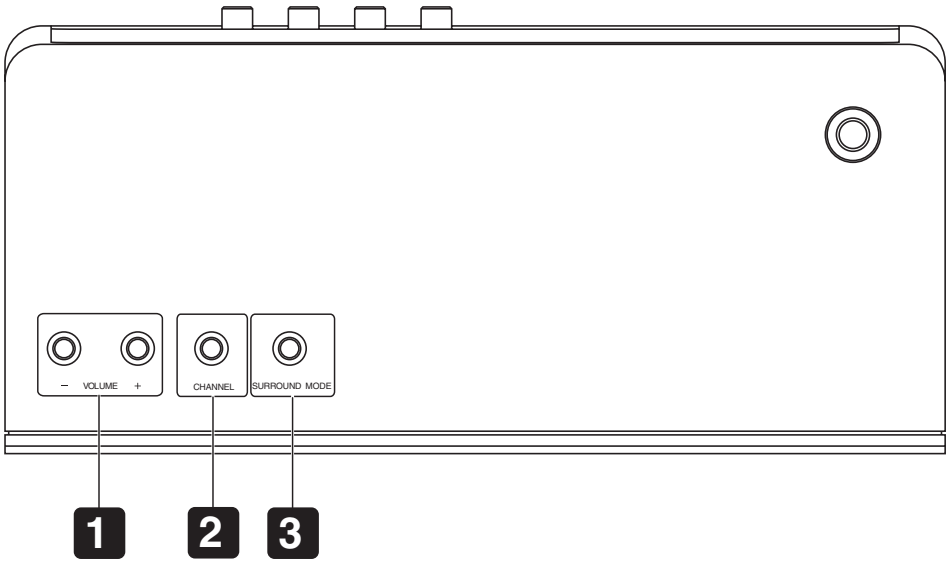
● **Pin Function**

No.	Pin Name	I/O	Pin Function
1	RF	O	RF connection
2	R IN	I	R ch Audio data input
3	GND A	–	Ground A
4	L IN	I	L ch Audio data input
5	STANDBY	I	Standby input
6	MUTE	I	Signal Mute Input
7	VCC1	–	Power supply 1
8	VCC2	–	Power supply 2
9	L+OUT	O	L ch + Amplifier Output
10	GND P	–	Ground P
11	L- OUT	O	L ch - Audio data Output
12	R- OUT	O	R ch - Audio data Output
13	GND P	–	Ground P
14	R+ OUT	O	R ch + Amplifier Output

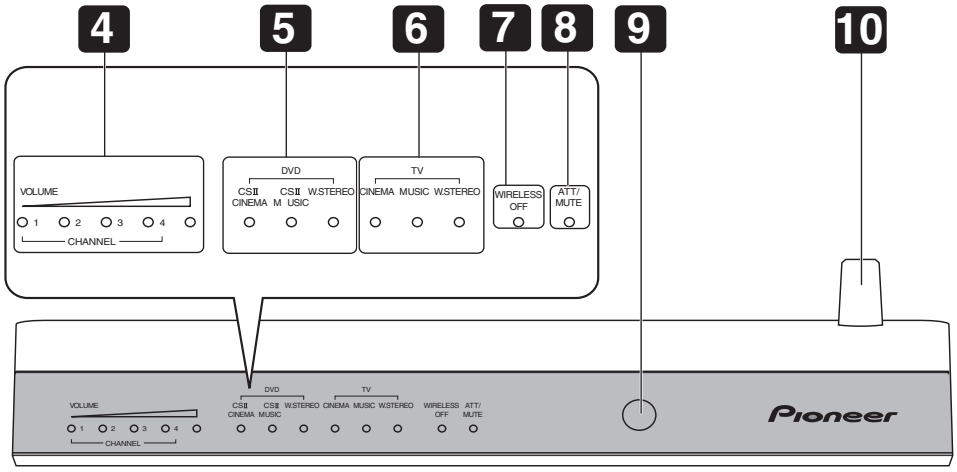
8. PANEL FACILITIES

TRANSMITTER

TOP



DISPLAY / FRONT



1 VOLUME +/–
Press to adjust the volume of the wireless speaker (and subwoofer, if connected).

2 CHANNEL
In case of poor reception due to interference from other electrical devices, you can improve reception by selecting another channel. Each time you press the button, the channel changes sequentially:

CH1 → CH 2 → CH 3 → CH4

Note

- Poor reception may cause the audio to be interrupted or stopped. This is not a malfunction. Try changing the location or orientation of the transmitter and/or the wireless speaker to improve reception.
- See also Placing the wireless speaker system Radio wave reflections Scope of operation on troubleshooting.

3 SURROUND MODE
Press to switch the surround mode.

Note

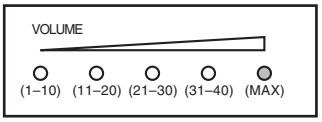
- Since the surround modes work in conjunction with the corresponding input (DVDor TV), make sure the mode you've selected corresponds with the input source.

4 VOLUME / CHANNEL indicators
Shows the volume level of the wireless speaker; blinks when the volume is changed (does not light when WIRELESS OFF is selected).

When a channel is selected, the corresponding channel indicator blinks for five seconds before returning to the volume display.

Note

- The step level for each LED in the volume indicator is shown below.



5 DVD input mode indicators
Light to indicate the surround mode set for the DVD input (CS II CINEMA, CS II MUSIC or W.STEREO).

6 TV input mode indicators
Light to indicate the surround mode set for the TV input (CINEMA, MUSIC or W.STEREO).

7 WIRELESS OFF indicator
Lights when sound from the wireless speaker is switched off.

8 ATT/MUTE indicator
Lights when output to the wireless speaker is being attenuated. Blinks when output is muted.

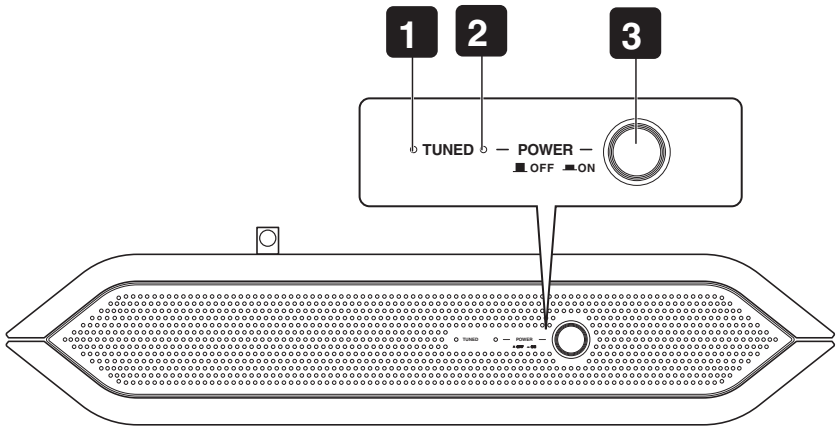
9 Remote sensor
Receives the signals from the remote control.

- Make sure that there are no obstacles between the remote and the remote sensor on the unit.
- The remote has a range of about 7 meters, within 30° either side of the remote sensor.
- Remote operation may become unreliable if strong sunlight or fluorescent light is shining on the unit's remote sensor.

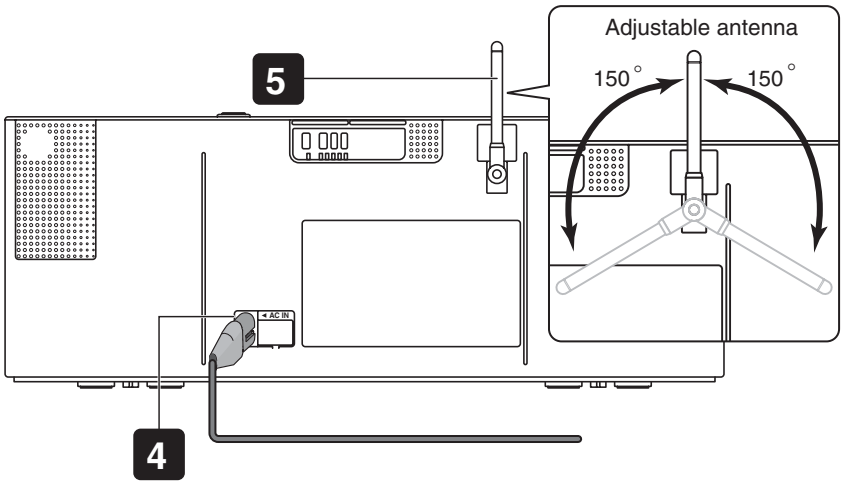
10 Transmitter antenna
Transmits signals to the wireless speaker.

Wireless Speaker

Upper



Back



1 TUNED indicator
Lights when the signal from the transmitter is properly received.

2 POWER indicator
Lights when the wireless speaker is switched on.

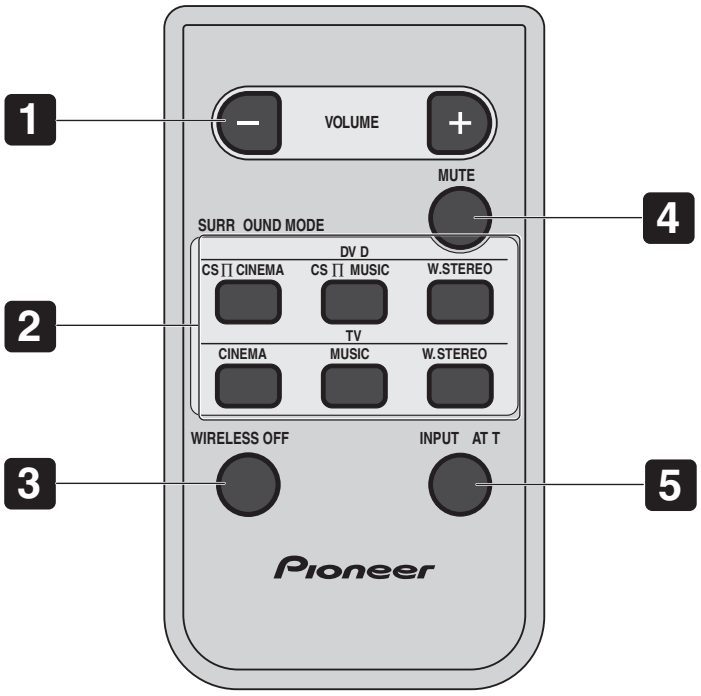
3 POWER
Press to switch the unit on or off.

4 AC IN cord inlet

5 Wireless speaker antenna
Receives signals from the transmitter.

- Note that if you choose to adjust the antenna, turning it too far to the left or right (shown above) may damage the unit.

Remote control



1 VOLUME +/–
Press to adjust the wireless speaker volume.

2 SURROUND MODE buttons
Press to switch the surround mode.

3 WIRELESS OFF
Press to switch off sound from the wireless speaker (the TV or mini component outputs sound in stereo). Use one of the **SURROUND MODE** buttons to enjoy surround sound from the wireless speaker again.

Note

- The DVD input is automatically selected when **WIRELESS OFF** is pressed.

4 MUTE
Press to mute/restore sound from the wireless speaker.

5 INPUT ATT
Press to attenuate high level signals to prevent distortion from the wireless speaker (press again to switch the attenuator off).

You can set the input attenuator on or off separately for the DVD and TV inputs.